Technology Review

Edited at the Massachusetts Institute of Technology

May, 1963

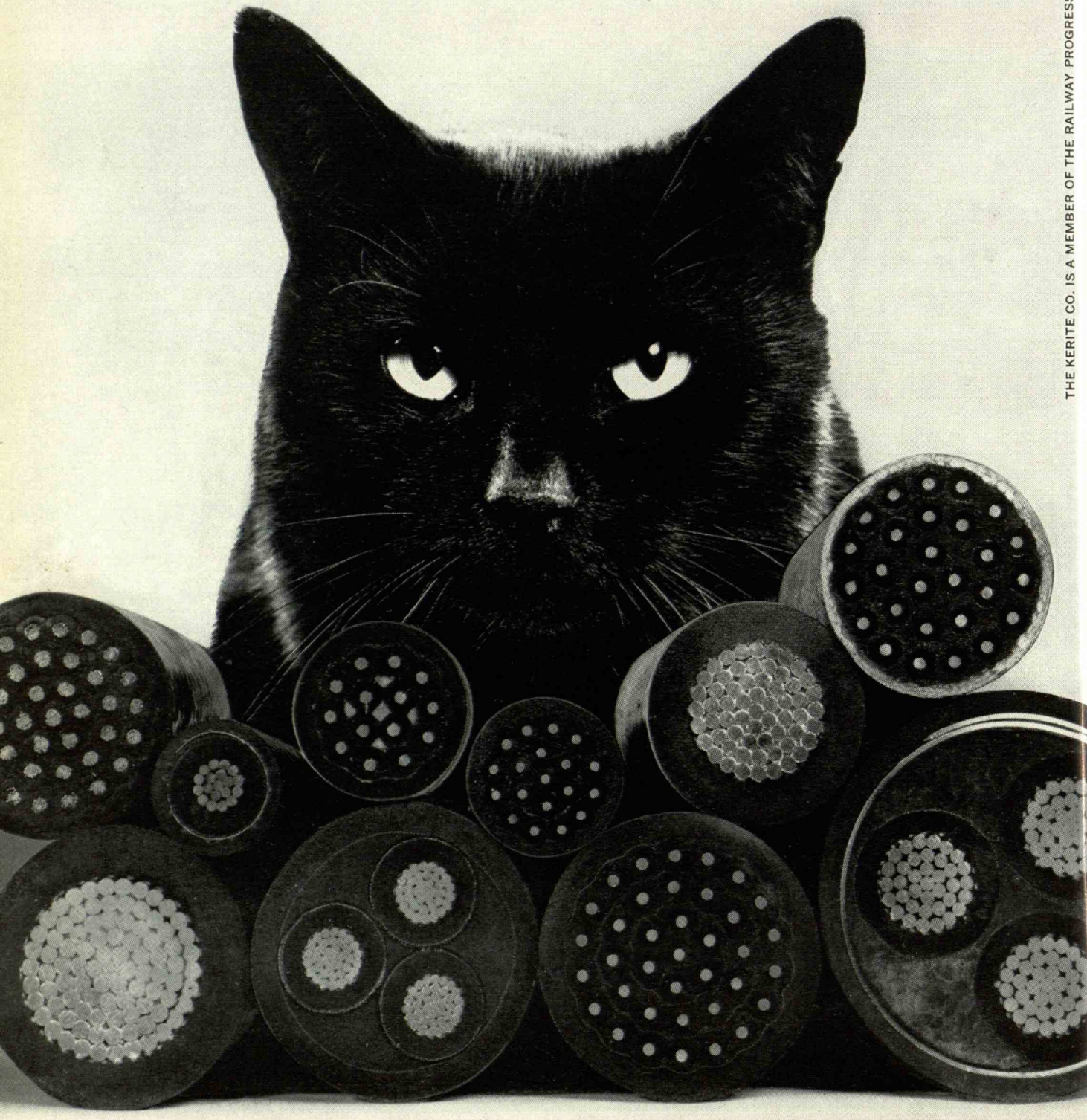
Automation, Management, and the Future, Page 17



Dr. Killian on Science and Public Policy, Page 13

technology
review
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A Kerite cable, too, has nine lives...and many more.

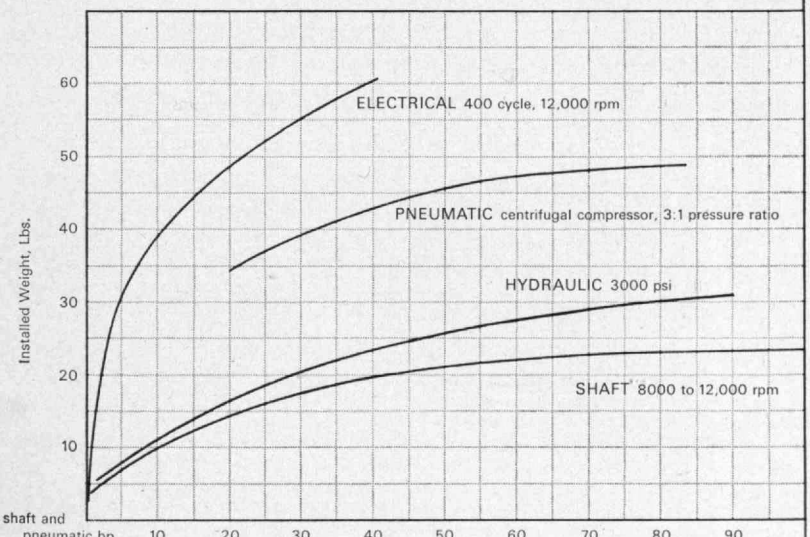
Lightweight, independent power systems

for pods, missiles, aircraft, spacecraft re-entry

Where available power and space are limited, Garrett-AiResearch ram air turbines provide ideal independent power systems. Outputs range from fractional to 100 hp with minimum weight and space requirements, and at durations over approximately three minutes they are 50-70 per cent lighter than other types of systems.

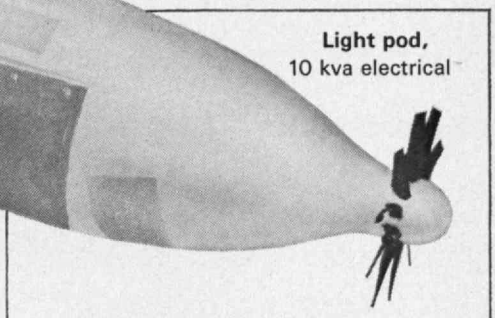
The fine speed control regulates electrical output to within ±5 per cent, and response rate from no load to full load is one-tenth of a second. Advanced blade design and mechanical governor permit minimum drag and automatic feathering to match load requirements.

AIRESEARCH RAM AIR TURBINE OUTPUTS VS. WEIGHT
250 Knots, Sea Level Standard Conditions



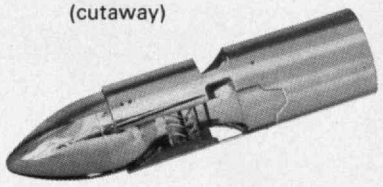
shaft and pneumatic hp	10	20	30	40	50	60	70	80	90
kva, 400 cycle	7.5	14.9	22.4	29.8					
gpm, @ 3000 psi	5.7	11.4	17.2	22.9	28.6	34.3	40.0	45.8	51.5

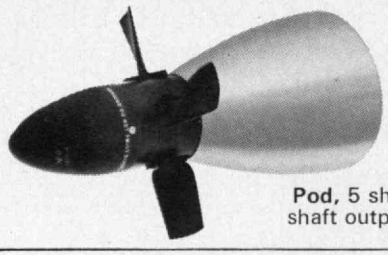
AiResearch has produced thousands of ram air turbines in 30 models and can deliver complete systems of proven reliability in minimum time, including alternators and pumps or power-using devices. Please direct inquiries to the Los Angeles Division.



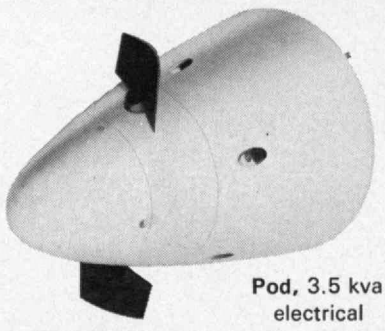
Light pod, 10 kva electrical

Missile, 225 watts, 6000 cps electrical (cutaway)

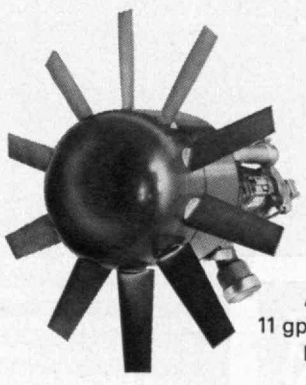




Pod, 5 shp shaft output



Pod, 3.5 kva electrical



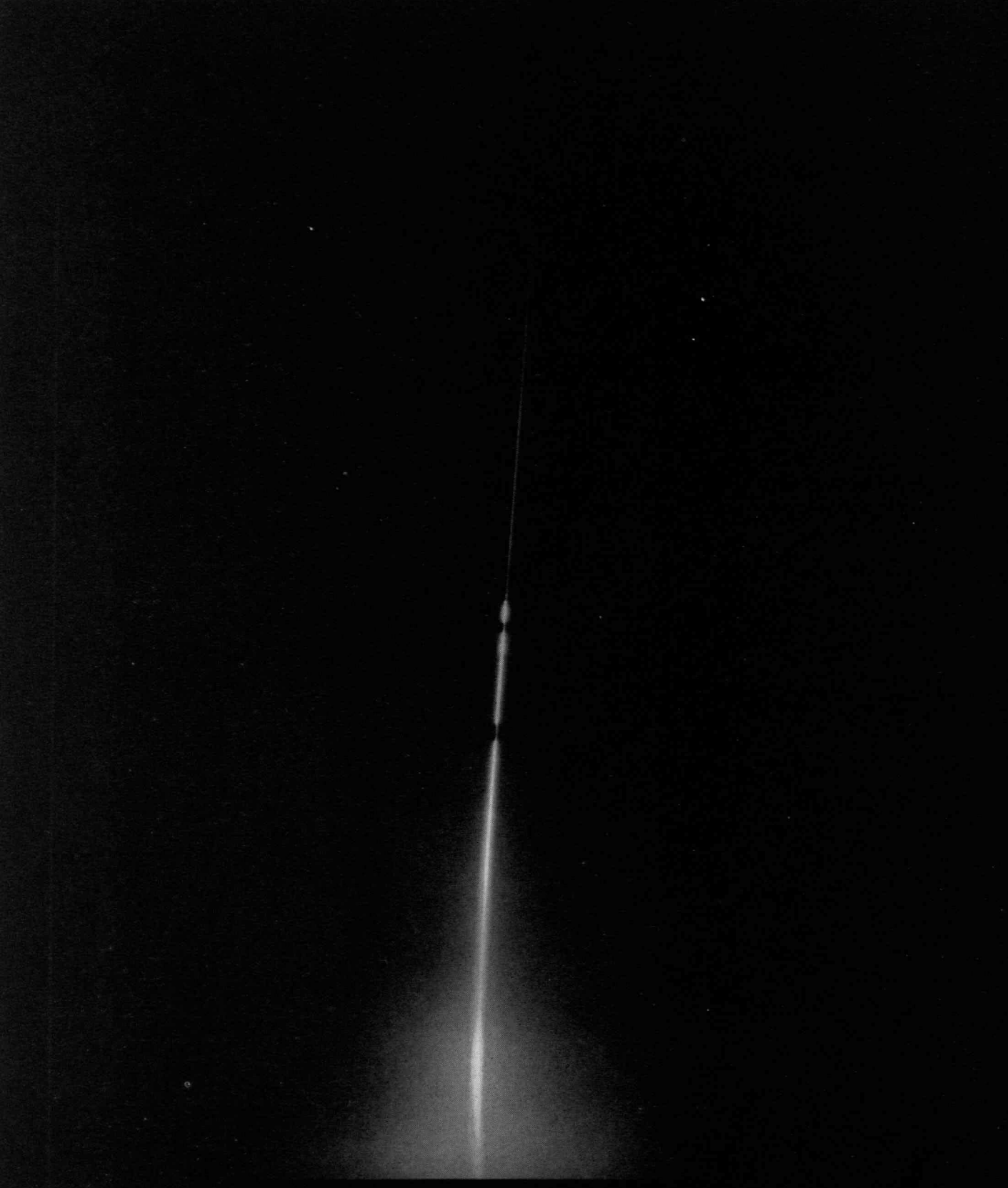
Aircraft, 11 gpm-1600 psi hydraulic

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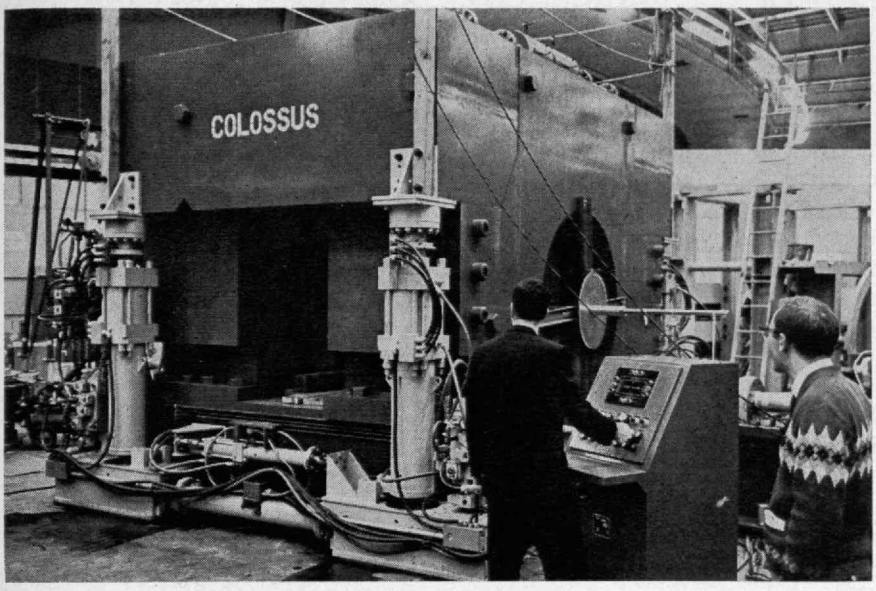
Solid State Physics
Information Processing
Radio Physics and Astronomy
Radar Design
Control Systems
Space Surveillance Techniques
Re-entry Physics
Space Communications

A description of the Laborator
work will be sent upon reques

Edited at the Massachusetts Institute of Technology
Volume 65, Number 7

Technology Review

Reg. U.S. Pat. Off.



THIS WALKING MACHINE, called Colossus, will house and move a 40-inch bubble chamber being assembled at the Cambridge Electron Accelerator. It is further described in a Trend of Affairs item on page 23.

NEXT MONTH and in the July issue, The Review will feature reports on the Second Century Fund, Commencement, and Alumni Day at M.I.T.—in addition to the usual news of research programs, educational developments, new books, people, and reminders of the Institute's yesteryears.

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Room 1-281, M.I.T.,
Cambridge 39, Mass.

The Review's publisher and editor is *Volta Torrey;* business manager, *R. T. Jope, '28;* assistant to the editor, *Ruth King;* and class news editor, *Roberta A. Clark*. Editorial consultants are *J. J. Rowlands, Francis E. Wylie,* and *John I. Mattill.* Members of its staff are *Madeline R. McCormick, Patricia Fletcher,* and *Maxine Kenny.*

Officers of the Alumni Association of M.I.T. are: *William L. Taggart, Jr., '27,* President; *Donald P. Severance, '38,* Executive Vice-president; *Carroll L. Wilson, '32,* and *F. Leroy Foster, '25,* Vice-presidents; and *Frederick G. Lehmann, '51,* Secretary.

An annual subscription to Technology Review is $4 in the U.S., $4.50 in Canada and elsewhere, and a single copy, 60 cents. Three weeks must be allowed to effect a change of address, for which both the old and the new address of the subscriber should be given.

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May, 1963

Simply to suggest a large computer's ability to serve several users at once, four students posed for the photo on the cover beside a row of consoles and chess boards in the M.I.T. Computation Center. Like a person playing simultaneous chess with several opponents, a computer may be put to a variety of applications simultaneously—an idea discussed in the article on page 17.

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Science and Public Policy **13**

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Automation, Management, And the Future **17**

Martin Greenberger and Howard W. Johnson consider the impact of computers and current trends.

The Technical Man and Culture **25**

Edgar I. Williams, '08, writes on "Two Cultures," "The Poor Rockefellers," and the pursuit of happiness.

Earth Science in Engineering **27**

Peter S. Eagleson, '56, describes some current projects at M.I.T.

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Bob McCadden recalls its "golden years" for Samuel Jay Keyser.

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Many are promoted, and there'll be more new faces at M.I.T.

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An oral science program is announced and the metallurgists put on a show.

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By James T. Duane, '53, about opportunities for engineers.

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Individuals Noteworthy

Faculty Promotions

THE M.I.T. PROVOST, Charles H. Townes, announced the promotions in March of 24 members of the Faculty to the rank of professor and 23 to the rank of associate professor. By schools, those made professors were:

School of Architecture and Planning—*Kevin A. Lynch, '47,* city planning;

School of Engineering—*Clyde M. Adams, Jr., '49,* metallurgy; *Walter A. Backofen, '46,* metallurgy; *Raymond F. Baddour, '49,* chemical; *J. Melvin Biggs, '41,* civil; *Morton Finston, '48,* aeronautics; *Donald R. F. Harleman, '47,* civil; *Marten T. Landahl,* aeronautics; *Philip Mandel,* naval architecture; *Robert W. Mann, '50,* mechanical; *Edward A. Mason, '48,* nuclear; *William M. Siebert, '46,* electrical; *Kenneth N. Stevens, '52,* electrical; *Tau-Yi Toong, '48,* mechanical; *Robert V. Whitman, '49,* civil; *Herbert H. Woodson, '51,* electrical;

School of Humanities and Social Science—*Lincoln P. Bloomfield,* economics; *Robert S. Woodbury, '28,* humanities;

School of Industrial Management—*Warren G. Bennis, '55,* industrial management; *Thomas M. Hill,* industrial management;

School of Science—*Klaus Biemann,* chemistry; *Harald A. Enge,* physics; *Daniel M. Kan,* mathematics; *William L. Kraushaar,* physics;

By schools, those who were made associate professors were:

School of Architecture and Planning—*Marvin E. Goody, '51,* architecture;

School of Engineering—*Abraham Bers, '55,* electrical; *John Blair, '54,* electrical; *Henri Fenech, '57,* nuclear; *Deane Lent, '42,* mechanical; *Robert E. Newnham,* electrical; *Herbert H. Richardson, '53,* mechanical; *Arthur C. Smith,* electrical; *Joseph L. Smith, Jr., '59,* mechanical; *Herbert M. Teager, '52,* electrical; *David R. Whitehouse, '54,* electrical;

School of Humanities and Social Science—*Albert Ando,* economics; *Joseph D. Everingham,* humanities; *Frederick W. Frey,* economics; *David M. Green, '57,* economics; *G. Hubert Matthews,* modern languages; *Abner E. Shimony,* humanities;

School of Science—*David J. Benney, '59,* mathematics; *James G. Glimm,* mathematics; *Henry W. Kendall, '55,* physics; *James R. Munkres,* mathematics; *Emily L. Wick, '51,* nutrition; *John W. Winchester, '55,* geology.

Honors to Faculty

RECENT recipients of new honors on M.I.T.'s Faculty have included:

Yuk-Wing Lee, '27, Professor of Electrical Engineering, an honorary doctorate in applied sciences from the Université Catholique de Louvain in Belgium . . . *F. Albert Cotton,* Professor of Chemistry, an honorary doctorate of science from Temple University . . . Dean *Gordon S. Brown, '31,* designation as an eminent member of Eta Kappa Nu;

David F. Waugh, Professor of Biophysics, a Borden Award for outstanding research . . . *Robert V. Whitman, '49,* Associate Professor of Soil Engineering, a research award of the American Society of Civil Engineers.

Honors to Alumni

RECIPIENTS of recent awards and similar distinctions have included:

William C. Foster, '18, an honorary Doctor of Public Service degree by the George Washington University . . . *Samuel E. Lunden, '21,* the Edward C. Kemper Award by the American Institute of Architects . . . *Harvey L. Williams, '22,* the Legion of Honor Medal and Citation by the French Consulate;

Thomas R. Camp, '25, the New England Award by the Engineering Societies of New England, Inc. . . . *George A. Swartz, '52, Philip K. Baltzer, '55,* and *Edward C. Fox, '56,* Achievement Awards by RCA Laboratories.

(*Continued on page 6*)



HEAD TABLE guests at the Alumni Council's 365th meeting included (from left) F. G. Lehmann, '51, Leo M. Beckwith, '35, Paul Wing, Jr., '34, Julius A. Stratton, '23, William L. Taggart, Jr., '27, and C. G. Bowen of The M.I.T. Press.



New brilliance for records...

Have you ever had trouble with dust clinging to your phonograph records—clogging the grooves, collecting on the needle, and spoiling the most carefully reproduced sound? That happens when a record builds up static electricity and becomes a magnet for dust every time it's played. ▶ But Union Carbide scientists have found a way to end this nuisance. Into the vinyl plastic developed for records, they have built a special anti-static agent. Already more than 50 million stereo records have been produced from this improved plastic. ▶ Ever since the creation of the first vinyl phonograph record, Union Carbide has worked closely with the leaders in the record industry to achieve the brilliant high-fidelity available to you today. Vinyl is one of the important family of BAKELITE brand plastics, which includes phenolics, styrenes, epoxies, polyethylenes, and polypropylenes. Pioneers in plastics for more than 50 years, the people of Union Carbide are continuing their research in these useful materials.

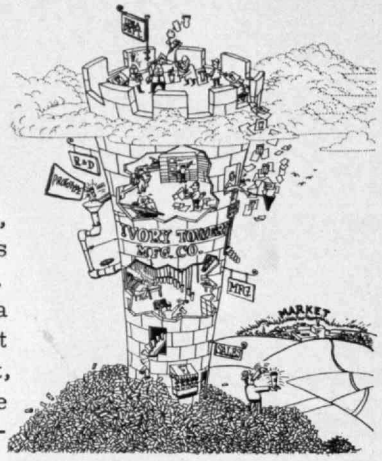
A HAND IN THINGS TO COME

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LOOK *for these famous Union Carbide consumer products—*EVEREADY *batteries,* LINDE *stars,* PRESTONE *anti-freeze and car care products, "6-12" insect repellent.*

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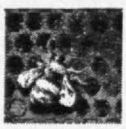


EPITOME OF DETACHMENT, suited to intellectual endeavors that are nourished from within. Clearly not the way to run a profit-making business that must be nourished from without, -- from free-willed acceptance of products by needful consumers in the marketplace.

HOW IS your new product (or new business) development program structured? Does it derive principally from within? Or is it built upon a broad and balanced base: secure technology; known market need; full awareness of competition; careful self-evaluation of corporate strength and objective?

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mei COMPUTER-PLOTTER COMPLEX
MEISSNER ENGINEERS, INC., CHICAGO

Individuals Noteworthy
(*Continued from page 4*)

Philosophy Professor

JAMES F. THOMSON has been appointed professor of philosophy in M.I.T.'s Department of Humanities.

Mr. Thomson was born in London in 1921 and graduated from the University of London in 1949. He was an assistant in the Department of Philosophy, and John Stuart Mill Scholar at University College, London, from 1949 to 1950; Commonwealth Fund Fellow at Harvard and Princeton from 1950 to 1951; assistant lecturer at University College from 1951 to 1953; University Lecturer in Moral Science at the University of Cambridge from 1953 to 1956; and has been Fellow and Tutor in Philosophy, Corpus Christi College, Oxford, and University Lecturer (C.U.F.) since 1956. He was visiting lecturer at Columbia from 1961 to 1962.

IAS Fellows

NEWLY ELECTED Fellows of the Institute of the Aerospace Sciences include *Rene H. Miller,* Slater Professor of Flight Transportation at M.I.T.; *George S. Trimble, Jr., '36,* Vice-president, The Martin Company; and *R. Dixon Speas, '40,* President, R. Dixon Speas Associates.

(*Continued on page 34*)

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INTERPRETER

Slide rules and petticoats . . . what a combination! Incongruous? Yet this home economist, who is employed by the Frigidaire Division of General Motors, is involved with each. She wears many "hats" . . . tester, designer, writer, demonstrator. She conducts classes in home economics in schools and companies—teaches how to get the most out of new GM-built household appliances.

She and her counterparts spend full time interpreting the desires, needs and habits of American women in the kitchen and laundry room. Her department, for example, will bake enough cakes to make a stack 125 feet high just in testing a single oven design! In checking a new washer design, thirty tons of clothes are washed. In fact, she's "the voice of women" to the men who engineer and manufacture these appliances.

She's one more important member of the GM team—a team that includes more than 600,000 employes and a million-plus shareholders—as well as thousands of suppliers. Together they represent GM's greatest asset—*people.*

GENERAL MOTORS IS PEOPLE . . .

Making Better Things For You

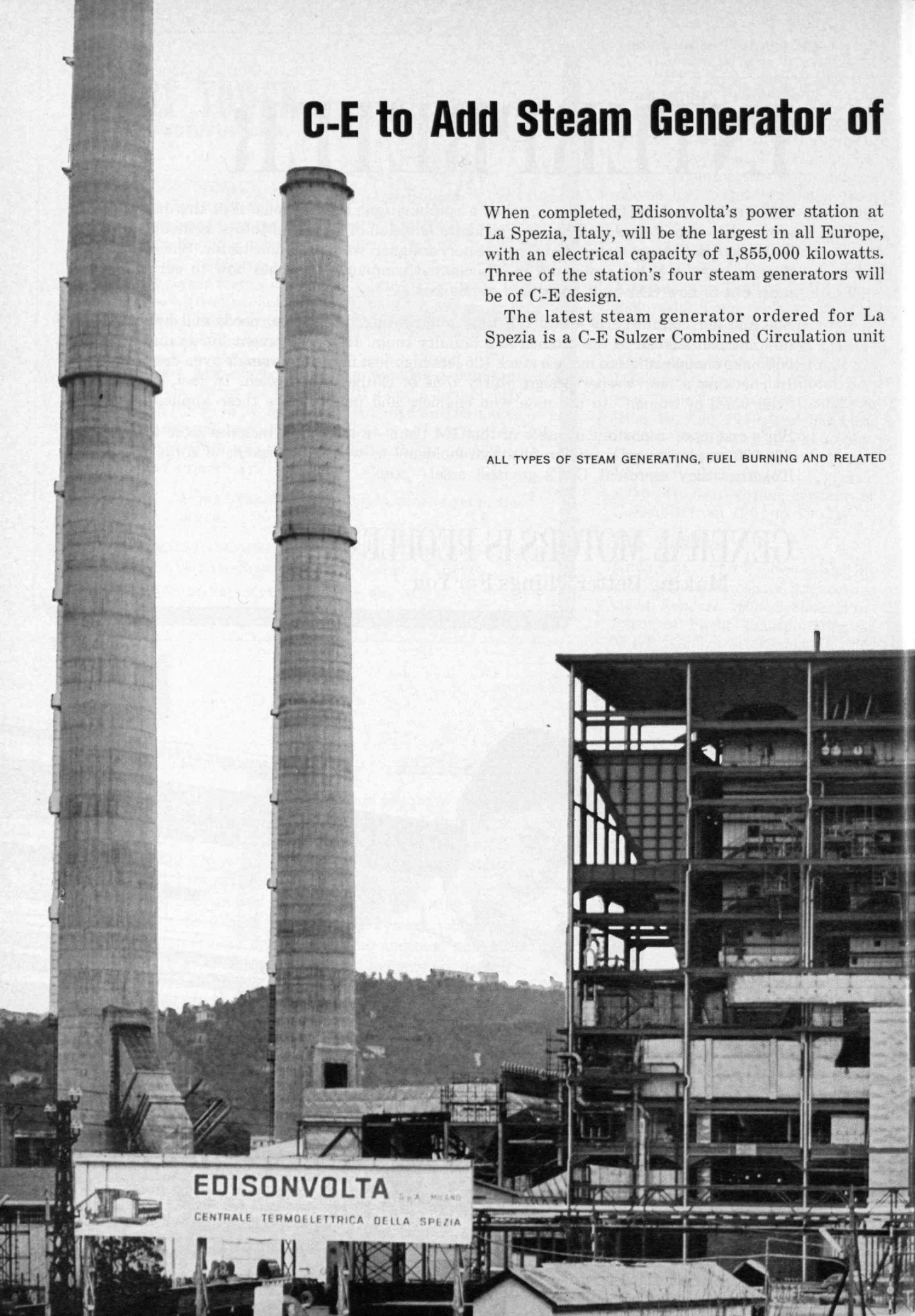


C-E to Add Steam Generator of

When completed, Edisonvolta's power station at La Spezia, Italy, will be the largest in all Europe, with an electrical capacity of 1,855,000 kilowatts. Three of the station's four steam generators will be of C-E design.

The latest steam generator ordered for La Spezia is a C-E Sulzer Combined Circulation unit

ALL TYPES OF STEAM GENERATING, FUEL BURNING AND RELATED



World's Most Advanced Design to La Spezia

—the most advanced design in the world and the first of its kind outside of the United States. It will stand 19 stories high—larger than any steam generator now in Europe.

Fabricated by Combustion Engineering and its Italian licensee, Franco Tosi, S.p.A., the new unit will deliver steam at a pressure of 3500 pounds per square inch to a 600,000 kilowatt turbine. Superheat temperature is 1005F; the two reheat temperatures are 1030/1055F.

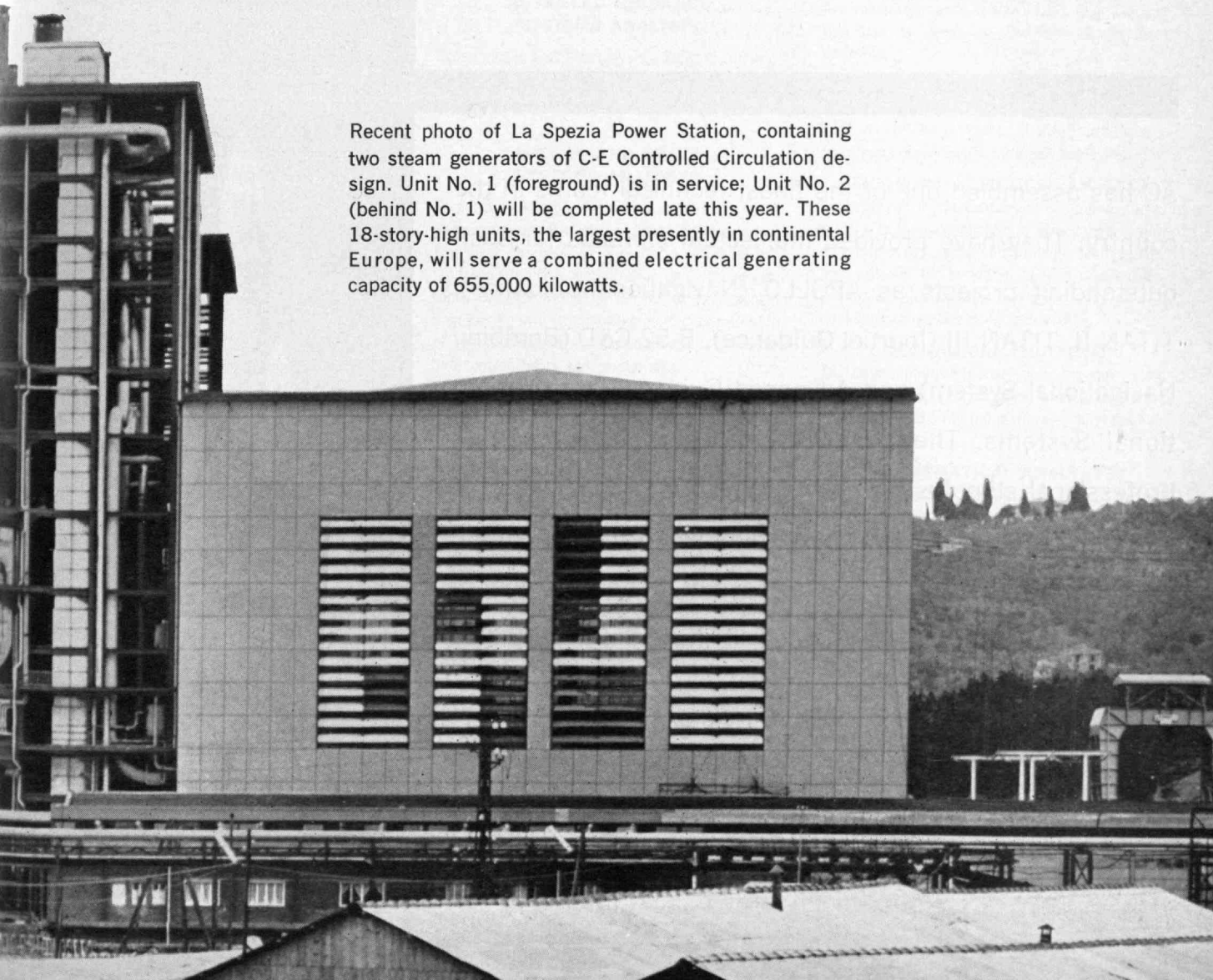
The advanced Combined Circulation principle will help Edisonvolta provide more electricity at lower cost to the people and industry of the Northern part of Italy.

COMBUSTION ENGINEERING

International Operations Division, 200 Madison Avenue, New York 16, N. Y.

C-404

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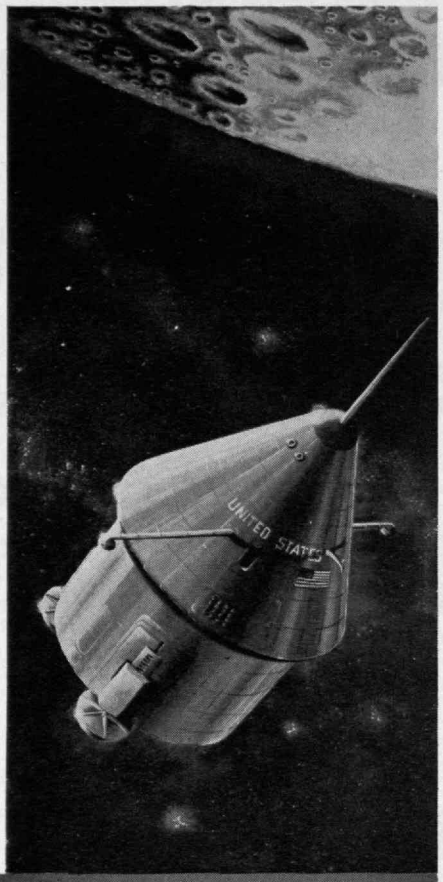


Recent photo of La Spezia Power Station, containing two steam generators of C-E Controlled Circulation design. Unit No. 1 (foreground) is in service; Unit No. 2 (behind No. 1) will be completed late this year. These 18-story-high units, the largest presently in continental Europe, will serve a combined electrical generating capacity of 655,000 kilowatts.

AC SPARK PLUG, THE ELECTRONICS DIVISION OF GENERAL MOTORS, OFFERS ENGINEERS AND SCIENTISTS . . .

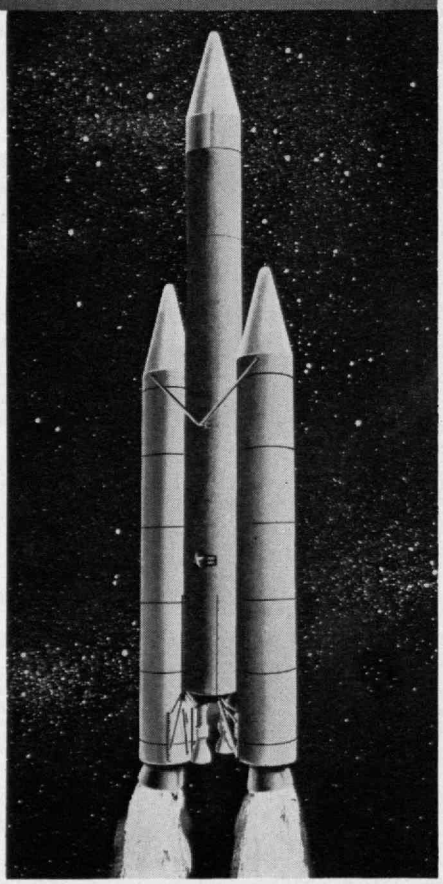
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Review the opportunities listed on the opposite page. Then contact us for an immediate evaluation of your qualifications.



USAF TITAN III SPACE BOOSTER

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SYSTEMS ANALYTICAL ENGINEERS

To perform analytical trajectory studies for missile applications. Strong math background with experience in analog and digital computer simulations is essential. Will interpret customer requirements, analyze system model specifications, error allocations, accuracy estimates and guidance equations.

SYSTEMS MECHANIZATION ENGINEERS

To design and mechanize inertial guidance systems or subsystems. BS, MS or PhD in EE, Math or Physics with minimum of two years aircraft or fire control experience employing closed loop systems, switching circuits and digital techniques.

DATA ANALYSTS

To perform data analysis studies to evaluate inertial guidance system performance based on in-house or field test programs. BS, MS or PhD in Math with knowledge of telemetry instrumentation and digital techniques.

SENIOR SCIENTIFIC PROGRAMMERS

Concerned with simulation of guidance and control systems, electronic system design and logic designs. Will perform satellite and trajectory studies, numerical and statistical analysis and systems calibration. BS or MS in Engineering, Physics or Math with a minimum of two years experience.

CIRCUIT DESIGN AND ANALYSIS ENGINEERS

To design and/or analyze servo amplifiers, DC operation amplifiers, power converters, feedback amplifiers and pulse circuits. Will work in the area of IMU electronics. BSEE, plus three to five years experience in above field required.

MECHANICAL DESIGN AND DEVELOPMENT ENGINEERS

To assist in the design and development of the Apollo ground handling equipment. BSME, plus two to three years related experience required.

SYSTEMS ENGINEERS

To assist in interface of Apollo airborne and ground support equipment and including the development of test circuits to ensure proper GSE checkout before interface. BSEE, plus two to three years related experience required.

WEST COAST

LOS ANGELES

(Advanced Concepts Laboratory— Research & Development)

COMPUTER RELIABILITY ENGINEER

Senior opening for position in the area of advanced digital computer reliability techniques toward the design of space guidance computers. Investigations include self-adaptive techniques, allocation of redundancy and reliability performance evaluation. At least three to five years of directly applicable experience and advanced degree in engineering, mathematics or related sciences is preferred.

TRANSISTOR CIRCUIT DESIGN ENGINEERS

To interpret basic sub-system requirements and to design and develop efficient and reliable solid state circuit design and the design of feed-back circuits. MSEE with one year experience or BSEE with two years experience.

ADVANCED GUIDANCE SYSTEMS ANALYSIS

Experience in systems analysis, advanced guidance analysis and trajectory analysis relating to space vehicles and ballistic missiles.

MISSILE AND SPACE SYSTEMS ANALYSTS

To perform analysis of advanced missile and space guidance systems involving design of trajectories; statistical approach to mid-course and terminal guidance problems, optimization of guidance systems. BS, MS or PhD in EE, ME or Aeronautical Engineering with strong background in one or more of the following areas: astrodynamics, guidance and control theory and/or statistics.

MECHANICAL SPECIALISTS

Specific requirement is for Inertial Measurement Unit Mechanical Design Specialists. Must have eight to ten years experience as designer in fields relating to stable platforms, gyro packaging and associated areas. BSME required; advanced degree is preferred.

SENIOR MECHANICAL ENGINEER

To design hardware relating to inertial guidance components. BSME required, plus minimum of five years experience in inertial guidance hardware design.

EAST COAST

BOSTON

(Advanced Concepts Laboratory— Research & Development)

SENIOR PHYSICISTS AND ENGINEERS

Preferably having advanced degrees and experience in theoretical and experimental development of precision devices. The particular area of investigation relates the application of mechanics, electricity, nucleonics and physical phenomena to inertial measurement components, such as gyros and accelerometers.

INERTIAL SYSTEMS ENGINEERS

To engage in the analysis, synthesis and mechanization of advanced inertial navigation systems. Will perform optimization studies, error analysis and system configuration studies in the fields of space navigation and avionics. Advanced degree or BS with analytical systems background required. Two or more years experience in inertial systems preferred.

ELECTRONICS ENGINEER

To design and develop semiconductor pulse circuits, logic circuits, digital analog circuits and precision DC amplifiers. BS or MS, plus three to five years experience in above field. Experience in the area of precision electrical measurement desirable.

ELECTRONICS ENGINEER

To design transistor feedback, servo amplifier and low level switching circuits. BS or MS with three or more years experience in the above fields desirable.

SENIOR MATHEMATICAL ANALYST

To engage in mathematical and computer studies relating to the evaluation and optimization of new and improved inertial instruments, components and systems. BS or MS in applied mathematics or physics, plus three to five years experience in mathematical and/or computer analysis.

MECHANICAL ENGINEER

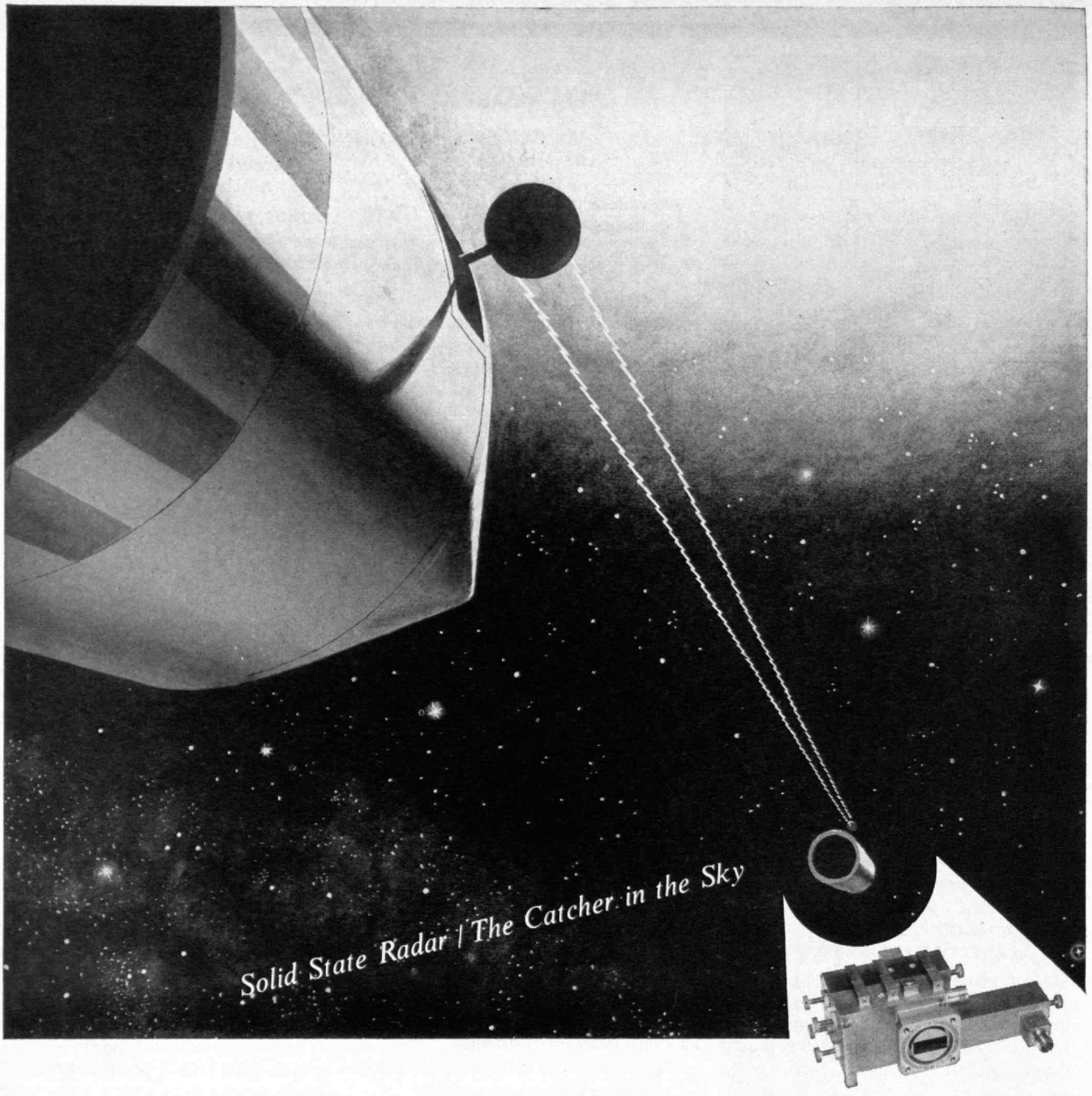
To design miniature inertial platforms and gimbal systems. BSME required, plus three to five years experience in the inertial platform-gimbal systems field.

MATHEMATICAL ANALYSTS

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Science and Public Policy

The subtle art of utilizing science wisely is still embryonic but needed now in all nations

BY JAMES R. KILLIAN, JR., '26
Chairman of the M.I.T. Corporation

IN GOVERNMENTS throughout the world today, science, invited or uninvited, sits at the conference tables where domestic and foreign policies are shaped. It can hardly be otherwise, since the revolutionary thrust of science and technology is constantly creating new conditions with which governments must deal. This paper examines the coupling between science and government and the adaptation of scientists to political responsibility, particularly in the United States. It is an essay about a new domain of political science, where scientist and politician interact in formulating public policy.

The use of science and technology for the benefit of the less-developed areas is one of the most challenging aspects of this new domain. So far, the *helping* nations have been much less successful in integrating science into their programs to aid the less-developed nations than they have in using science in their own internal planning and policy making. These nations must base their technical aid programs on the most thorough research and study. They must enlist scientists and engineers to work with social scientists in the preparatory phases of these programs. Especially must they exercise care to enlist those who can work sensitively and effectively in alien environments if their aid programs are to be truly beneficial.

The *receiving* nations, themselves, have a special need for mature, sensitive scientific advice. These nations, acutely conscious of their material needs and of the power of science and technology to aid in their realization, sometimes expect too much too fast. They must plan realistically. And they must, as they know, give the greatest priority of all to education.

The late Reverend Solomon B. Caulker of Sierra Leone, speaking at Rehovoth, Israel, in the summer of 1960, stated the challenge to science education most vividly when he asked science "not for prestige projects but the answer to the witch doctor."

Problems of organization and administration of a national science policy increase with the size and complexity of the effort mounted, but the essential objectives are the same in any nation: first, to see that whatever the scientific resources of the country are, they are given the fullest chance to develop and be productive, and, secondly, to facilitate the application of science and technology to the economic and social objectives of the country.

THIS ARTICLE consists of parts of a paper prepared for the United Nations Conference on the Application of Science and Technology for the Benefit of Less Developed Nations, which was held last February in Geneva.

In Russia and Britain

The most common practice in use today is to establish a national council or committee to make the judgment of outstanding scientists of the country available to government policy makers. In some countries these councils perform an advisory and co-ordinating function only; in others, they are responsible for the administration of national laboratories or research institutes as well. Sometimes the council is a direct arm of the government; sometimes it is statutorily independent and privately funded. Occasionally the council reports to the President or Prime Minister; more often it reports to a member of the executive cabinet—a minister of science or minister of education, for example.

In a few countries the official advisory and co-ordinating bodies are the national academies of science; until recently, the most notable exemplar of this function has been the Academy of Sciences of the U.S.S.R. The more usual practice is to draw on the national academy for scientific representation in the national council, or for assembling special panels or committees to study and make recommendations on particular policy questions.

In the spring of 1961, responsibility for co-ordinating the U.S.S.R.'s total research and development effort was established at the highest level of the Soviet government by the creation of a State Committee for the Co-ordination of Research and Development with a Deputy Chairman of the Council of Ministers as its head. The membership of this central co-ordinating committee includes the president of the Academy, the minister of higher and secondary specialized education, and representatives of each of the important state committees involved with research and development

work. The Academy retains its role of "exercising scientific and methodological leadership," but with its work "focused primarily on the most important long-run problems of science" and with its concern for the myriad Soviet technological institutes removed.

The British system has its roots in the tradition of government as the patron and not the direct employer of science. The first, and largest, of its organizations for fostering research, the Department of Scientific and Industrial Research, was founded during the first World War and, for purposes of Parliamentary responsibility, was placed under the senior cabinet minister bearing the title: Lord President of the Privy Council. Subsequently, when other independent bodies for fostering research in special fields like medicine, agriculture, and conservation were formed, they, too, were placed under the wing of the Lord President, and gradually this particular ministerial post began to take on responsibility for a good part of the nondefense research activity receiving government support.

From their inception, the research councils, as they are called, have performed their missions by making supporting grants to British industry's co-operative research associations, by making research and fellowship grants to the universities and colleges of advanced technology, and by undertaking research in government-owned laboratories that would not otherwise be carried out by either public or private institutions.

At the end of the last war, the responsibility of the Lord President for "broad questions of scientific policy outside the sphere of defence" was formally recognized, and, to aid him in carrying out his responsibilities, there was created an Advisory Council on Scientific Policy, most of whose 15 members are respresentatives of the scientific community. Three years ago the incumbent Lord President, Viscount Hailsham, who is not himself a scientist, was given a new portfolio: Minister for Science.

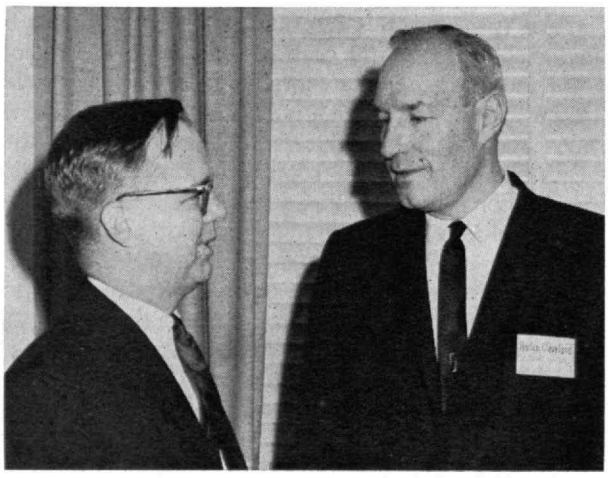
One other point of interest before we leave discussion of the British system is its Parliamentary and Scientific Committee, made up of members of both houses of Parliament and representatives of British scientific and technical organizations. This informal committee—about 300 persons all told—meets periodically to discuss one aspect or another of current scientific interest and thus helps to maintain a body of informed opinion on scientific matters in the Parliament. Committees of a similar nature have recently been started in some of the parliamentary democracies in Western Europe.

In the United States

The emergence of scientists themselves to a position of high political influence is perhaps the most striking development of the past few years in the United States. This has come about in part because of the role of science in defense and the rapid increase in public funds appropriated for research, and in part because of the high scientific and technical content of many of the major policy decisions our President has to make. The nuclear weapon, of course, has generated a flood of complex policy questions. Specifically, what are the dangers of radioactive fall-out? If the nation is to enter into a test-ban treaty, or agree to arms control or disarmament, under what conditions can we detect their abrogation? The rapid growth of Federally supported medical research and the push into space are creating

M.I.T. Participants in the United Nations Conference

THE United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Nations, which met in Geneva in February, was an effort to further the "Decade of Development" first suggested by President Kennedy. It was called by the U.N. Economic and Social Council in a resolution sponsored by five nations, including the United States, and was attended by nearly 2,000 delegates representing scores of countries.



Dean Johnson (left) and Assistant Secretary of State Harlan Cleveland discussing the Geneva meeting.

M.I.T. men among those named to represent the United States included *J. Herbert Hollomon, '40,* Assistant Secretary of Commerce for Science and Technology; *Jerome B. Wiesner,* Special Assistant to the President for Science and Technology; *Joseph L. Gillson, '21,* Lecturer in Economic Geology; *Howard W. Johnson,* Dean of the School of Industrial Management; *Martin Meyerson,* Director of the Joint Center for Urban Studies; *Max F. Millikan,* Director of the Center for International Studies; *Thomas F. Rogers,* Assistant Division Head of Lincoln Laboratory; *Nevin S. Scrimshaw,* Head of the Department of Nutrition, Food Science and Technology; and *Thomas K. Sherwood, '24,* Professor of Chemical Engineering.

Papers were submitted for the conference by Professor Sherwood, Dr. Gillson, Professor Scrimshaw, Dean Johnson, Professor Meyerson, Visiting Professor Charles Abrams, Professor Lucian W. Pye, Professor Everett E. Hagen, Professor Millikan, Professor Paul N. Rosenstein-Rodan, Professor Richard H. Bolt, Dr. Killian, Dr. Wiesner, Professor Jerrold R. Zacharias, Professor William H. Radford, '32, Mr. Rogers, and Dr. Herbert Sherman.

still other sets of policy problems. The national space program particularly is interwoven with advanced technology and scientific objectives, and with such intricate problems as the proper organization for communication satellite systems or whether to authorize nuclear explosions in outer space in the face of contending scientific judgments as to the probable effects.



Policy questions such as these prompted President Eisenhower in 1957 to create a new position in his White House staff, that of Special Assistant for Science and Technology, and to appoint a member of the scientific community to hold that position. At the same time, he reconstituted the President's Science Advisory Committee, moving it from the Office of Defense Mobilization—where it had been established by President Truman, largely to be a stand-by resource, informed and available in the event of emergency—and broadening its scope to include any and all scientific matters it felt should be brought to the attention of the President and his Special Assistant. These moves, in effect give the scientific community direct access to the President—a position it had not had previously except during World War II, when Vannevar Bush, '16, as Director of the Office of Scientific Research and Development, served also as science adviser to the President.

The mandate of the Special Assistant for Science and Technology reflects an extraordinarily broad concept of the relationship of science to policy making. He is to have "full access to all plans, programs, and activities involving science and technology in the government," he is to be "available as an adviser to Cabinet members and other officers of government holding policy responsibilities," he is to "try to anticipate future trends and developments, particularly as they affect national security, and suggest future action in regard thereto," and he is to advise on "scientific and technological matters at top-level policy deliberations."

In practice, the Special Assistant has served as chairman of the President's Science Advisory Committee, though at the choice of the committee itself, since it was felt that this body should be able to act independently of the political commitments attending a member of the President's staff. The members of the Science Advisory Committee serve as a board of consultants to the President and his Special Assistant and represent a wide range of scientific and engineering competence. This representation is extended by panels of experts in special fields appointed to study particular problems of interest to the committee and, in turn, to the government. Usually there are 10 or a dozen of these panels operating concurrently, and their frames of reference have ranged from matters of defense technology and science education to the general progress of our civilian, nongovernmental science and technology. Many of their studies are undertaken because the Special Assistant is able to identify areas in the policy-making process where science and technology may have an important bearing not recognized by his lay administrative colleagues.

To strengthen administrative machinery for the review and co-ordination of the government's rapidly increasing programs, and to facilitate making an overall view of the Executive Department's aims available to the Congress, the President's Special Assistant was recently made director of a new Office of Science and Technology and given a statutory underpinning.

Many of the government departments have science advisory panels and boards of their own, and recently some of the major departments have appointed qualified scientists and engineers either as full-time adviser or as assistant secretary to the Cabinet officer. Examples include the Director of Defense Research and Engineering in the Department of Defense and the Assistant Secretary of Commerce for Science and Technology.

Advice and Policy

Although Sir Charles Snow, in his Godkin lectures at Harvard on "Science and Government," overdramatized the Lindemann-Tizard conflict in England, he rendered a useful service by pointing out the hazards of a head of state getting his scientific advice principally from one individual, especially on matters that are not open for public review and debate.

The expert, however objective he tries to be in his advice, will inevitably be called upon to make political judgments along with his scientific ones. Robert Gilpin, in his recent book, *American Scientists and Nuclear Weapons Policy,* aptly describes the difficult middle ground occupied by the science adviser between "the realm of science, or *what is,* and the realm of policy, or *what is to be done.*" Mr. Gilpin concludes "that both scientists and political leaders have acted as if it were possible to make a clear delineation in policy formulation between the political and the technical realms. . . . This simplistic view of the scientist's role as adviser has created expectations which the scientist cannot fulfill. He is expected by political leadership, fellow scientists, and his own conscience to render only objective technical advice. As a consequence . . . scientists have been assigned many apparently 'technical' tasks whose performance has required a political skill far beyond their competence; scientists and political leaders have failed to realize the nature of the nontechnical assumptions underlying the scientist's advice; and scientists have charged one another with intellectual dishonesty when they have disagreed strongly with advice which has been given."

The policy maker often requires evaluations of projects or programs on which there has been a history of technical controversy, or of differing interpretations of technical facts by informed laymen (the nuclear-propelled aircraft, the RS-70, and certain great water-supply systems in the U.S. are examples). In arranging for evaluations in a context of controversy, it is important to recruit the most competent scientists and engineers available and let them study the problem in an atmosphere as free as possible from past commitments or from personal or departmental positions. It must be recognized that there are certain kinds of technical questions to which scientists and engineers with complete integrity and with equal objectivity and competence will respond differently. In these situations the advisers must state the facts, including their differences, and list the alternative interpretations of which the policy maker must be aware.

As science gets more and more involved in controversial policy decisions, both the policy maker and the body politic must understand that scientific method and analysis do not always yield a single, incontrovertible answer. There are, of course, many questions to which the scientist can give positive answers, the correctness of which can be demonstrated, but he sometimes has to resort to "dusty answers" when the policy maker understandably is "hot for certainty."

Checks and balances to insure the best scientific advice can be provided for, in part, by proper organization. In the United States, the President's Science Advisory Committee has direct access to the President. If it disagrees with his Special Assistant for Science and Technology, it can take an independent position and make it known to the President. As a board of consultants to the Special Assistant, it can also give him the benefit of varied points of view, and if he is wise, he can use it to test his judgment and insure against his own prejudices becoming dominant. This mechanism has worked well now under two Presidents, and has provided a range of views, an objectivity, and an uninhibited freedom of comment that no single science adviser could hope to match. Important, too, has been the fact that the President's Special Assistant and his advisory committee members have all recognized that their effectiveness rests on their ability to maintain the confidence of both the President and the scientific community.

The Flow of Advice

To be productive, an advisory committee must have a reasonable degree of homogeneity in basic viewpoints. If there are deep differences or animosities represented, the committee may be unable to function. On the other hand, such a committee should not become a clubby group who work together too comfortably. There should be uninhibited freedom of discussion and room for wide differences of view.

Scientific advice should flow upward to the top policy maker from a variety of sources in the scientific community, both within and without government; he should not depend alone upon his special advisers or committees or permit these formal arrangements to insulate him from grass-roots opinion.

A government's scientific departments, agencies, and laboratories are sources of scientific advice, varied, sometimes conflicting, but having the advantage of independent thinking and of being close to actual mission responsibilities. This is especially true in the United States. Not only are the many components of government—the Department of Defense, the Atomic Energy Commission, the Bureau of Standards, the Los Alamos and Lincoln Laboratories, the National Aeronautics and Space Administration, and so on—part of a great nexus of advice and judgment; so, too, are the National Academy of Sciences and the other independent professional societies, which have been wellsprings of suggestion, views, and advice. Such is the intercommunication within the scientific community that the views of its members become known and available not only to those directly advising the President but throughout the whole network of government departments. This kind of free-flowing articulation, giving a government deep roots in its scientific community, is of the greatest importance in arriving at sound science policy. It also serves to identify those among the scientific community with the potential broad grasp of national and international affairs essential if they are to serve ably as advisers to policy makers. In the United States, in fact, the increasing use of scientists and engineers in part-time advisory capacities and in expert panels to study particular problems is gradually building a sizable body of technically competent people with practical experience in public affairs.

In several of our universities and institutes of technology, students of science and engineering and students of political science and public administration are being brought together to study the ways in which their domains have interpenetrated each other. I believe more general adoption of such courses of study at the interface between science and political science will eventually build more effective bridges of understanding and communication between those who pursue a career in science and those who pursue a political career. I would also hope it would yield more scientists and engineers who are both willing and qualified to enter public life.

The Importance of Education

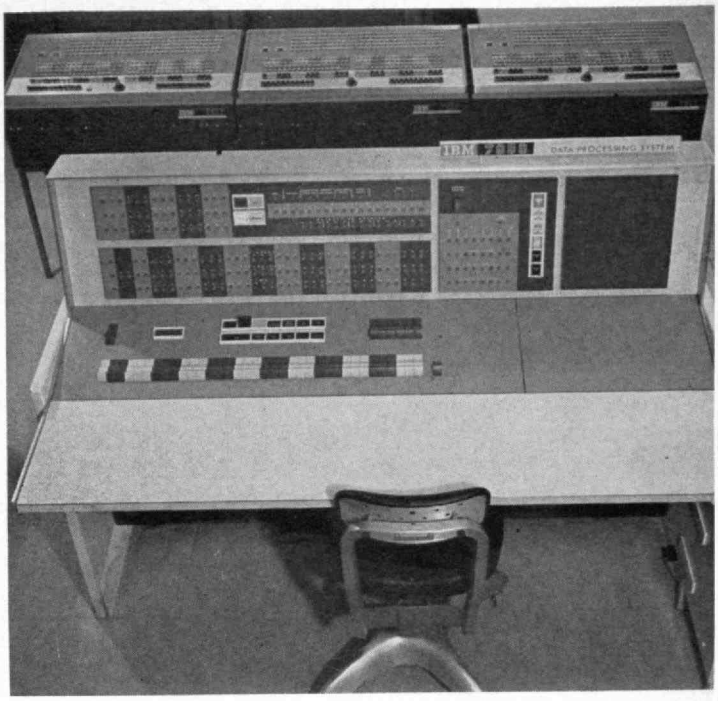
One of the first concerns of any forward-looking nation, seeking to mobilize the resources of science and technology for the benefit of its people, must be in the quality of its education in the sciences. This is just as important for a large and highly developed country like the United States as it is for the least developed and smallest of nations—in many ways more so at the present time, because so many of the less developed countries are turning to us for help in giving their young people the education and training they will need to carry forth plans for economic and social betterment in their own countries.

One of the major lessons learned both by countries giving technical assistance and by those receiving it is that much of it is wasted unless there is sufficient indigenous educational strength to carry through and achieve the aims of technical assistance programs once the outside experts have departed. Consequently, many universities are now engaged in co-operative efforts to establish schools of agriculture and engineering, teachers' colleges, technical institutes, and, in some cases, centers for advanced study and research, in countries that heretofore have had to export their young people to receive similar education and training, often to lose them completely or to have them return with much of what they have learned abroad ill adapted to the economic and cultural environment in which they have to live and work.

There are new patterns of mutual assistance in support of science education and research developing between the more advanced nations themselves. The countries of Western Europe particularly, as they have found their experiments in economic unity so rewarding, have moved to pool their scientific resources especially for the more costly ventures in space and nuclear science research. The European Center for Nuclear Research (CERN) at Geneva is a remarkably successful experiment in international co-operation. Its success has sparked many other proposals for regional action, in-

(Concluded on page 44)

Automation, Management, And the Future



A discussion of the changes that the further development of electronic computers may bring

BY MARTIN GREENBERGER
AND HOWARD W. JOHNSON
Of the M.I.T. School of Industrial Management

MANAGEMENT GROUPS in the United States, together with other segments of the economy, have reacted to the relentless force of automation with ambivalence. The benefits, however, both potential and already realized, clearly outweigh the ills, and the drive to automate continues at an accelerated pace. Automation promises to make increasingly deep inroads in industry, business, and government, and may ultimately reshape the nature of much of man's activity.

To date, the major weight of the changes introduced by automation has descended on the blue-collar worker. Steel factories have increased productivity with fewer operators and greater automatic control. Oil refineries are being monitored by computers. A subway shuttle in New York City has been run without a conductor or engineer. And although the total number of elevators in this country increases all the time, the number of elevator operators steadily diminishes.

Economists may point to these and similar examples of automation as the prime cause of abnormally high unemployment, and labor unions may slow the tide by their understandable resistance and concern. But the trend is clear. In a report entitled "The Benefits and Problems Incident to Automation and Other Technological Advances," President Kennedy's Advisory Committee on Labor-Management Policy stated that "automation and technological progress are essential to the general welfare, the economic strength, and the defense of the Nation."

Another group that has been feeling the pressure of automation is the clerical workers. A large digital computer that takes over the payroll, inventory records, and other accounting routines of an organization can replace several floors of office personnel. The new accounting procedures may create as many jobs as they destroy, especially if the company assumes functions and performs analyses which formerly were not feasible. But the new jobs are for computer coders, programmers, planners, machine operators, systems analysts, mathematicians, and others of higher technical competence than the clerical personnel.

As a result, there must be reshuffling of personnel, temporary dislocations, and perhaps some unemployment of the less skilled workers. Simultaneously, new opportunities open up in the technically skilled categories. As an example, the corps of computer programmers in the U.S.A. grew from nearly zero in 1951 to about 40,000 in 1961. Since then, the number of computer installations has more than doubled, now numbering over 10,000, and the number of programmers probably also has doubled. Reliable figures on the total number of data-processing personnel are not available, but the indications are that new positions created by the advent of computers may already exceed ⅓ million. The overwhelming odds are that this number will be dwarfed by its counterpart 10 to 20 years from now.

A current example of the automating of a large clerical procedure is the Electronic Central Office (ECO) developed by Bell Telephone Laboratories. The ECO system does the work of a central telephone office electronically and automatically. It also, says James B. Fisk, '31, President of Bell Laboratories, makes possible "a variety of new services which will double the flexibility and hence the potential value of each customer's telephone." A full-scale commercial ECO is now being installed in Succasunna, N.J., to serve that community's 4,300 telephone customers.

Included among the services being considered are:

1) Two-digit dialing for frequently called numbers.
2) Automatic routing of incoming calls to another line when the originally called line is busy.
3) Dialing a code to forward incoming calls to another telephone when the customer is not home.

THIS ARTICLE was based on a paper that Dean Johnson of the M.I.T. School of Industrial Management and Associate Professor Greenberger prepared for a Symposium on Automation last fall in West Berlin.



John J. Yostpille, '48, of the Bell Laboratories showing visitors a model of the Electronic Central Office.

4) Dialing a third party into a telephone conversation (called "conferencing").

In addition to these features, the ECO system will be capable of continual self-checking and self-correction. It will also answer questions about itself while running. The mode of operation is known as *time-shared control,* about which we will say more later.

Management

Is automation also affecting management? Yes, of course. Management must solve the labor problems that automation creates. It must also plan the procedural changes and purchase the equipment required. But the impact of automation on management does not end there.

The introduction of data-processing systems in many large companies has resulted in broad changes in organizational structure. Activities formerly divided among several departments and several managers, sometimes have been combined into a single department under a single manager. The traditional functions of marketing, distribution, procurement, production, personnel, finance, accounting, and sales have been brought closer together. An enlarged concept of operation, often referred to as the *systems concept,* has come into prominence, and managers are becoming more aware of how their responsibilities interact with those of other managers in shaping the nature and behavior of the total company.

The case of the International Shoe Company is illustrative. Serious business problems motivated its decision to install a data-processing system. Because new styles and patterns were constantly being added to existing styles without replacing them, the inventory of finished goods was soaring and volume per style was sinking. Markdowns became severe, service to customers was impaired, and operating costs grew. Raw material problems compounded the difficulties.

Management at International Shoe, faced with obsolescence of some materials and shortages of others, undertook a comprehensive study and decided to reorganize and automate information flow in 1954. Steps were taken immediately to accomplish certain desired integration and centralization, and to prepare for the computer expected in January, 1957. In the words of one company observer:

> . . . an electronic computer offered, for the first time, a chance for true integrated data processing. Consequently, we ruled out any single application, such as payroll or accounts receivable. We decided that the computer would best be used as an instrument of communication and coordination . . . for relating sales to inventories of finished goods, for converting basic sales estimates into estimates of raw materials and . . . labor requirements, and for setting up production schedules.

International Shoe sees its computer system as symbolizing and facilitating an entire new way of doing business. Even though enthusiasm for the computer is not universal throughout the company,

> the feeling of satisfaction is spreading . . . No one can be unimpressed by the reduction of our finished goods inventory from a peak of 11,500,000 pairs [in] 1954 to 8,000,000 pairs [in] 1958—and this done simultaneously with providing the best service in the past five years to our customers.

Processing times have been reduced dramatically. Raw material requirements that took three to four days to compute manually now take 75 minutes. Raw material estimates that formerly took three weeks now are prepared in less than half a day and are more comprehensive and informative. A final observation from United Shoe seems especially portentous:

> Our performance has been better in producing reports than it has been in the application of this new information by the people who receive it. Results from better statistics have been short of the full potential, because of a lack of intelligent human action. This very fact is one of the influences toward more extensive automation.

The Future

As time goes on, management may find computers and automated procedures creeping more and more into its once private homestead, proceeding deliberately and resolutely, like the tortoise in its contest with the hare. How long will the encroachment continue, and how complete will it be? That depends on the rate and extent of technological progress and the corresponding progress that we are able to make in using computers imaginatively. It is still too early to assess these variables accurately, yet most experts agree that automation eventually will exert changes on management at least as direct and far-reaching as those being exerted on clerical and blue-collar workers today.

What the experts do *not* always agree upon is the form that these changes will assume. There are at least two prevalent points of view. One, as put forth by Leavitt and Whisler, sees an almost complete obliteration of middle management as we know it today. Leavitt and Whisler expect a future breed of systems analysts to take over part of the planning that middle managers now do, with top managers taking over the rest along with other creative functions. They see certain middle managers moving upward in status and salary, others moving downward, and the line separating the top from the middle becoming more impenetrable than ever.



Users at three typewriter consoles can share an IBM 7090's time. (Its main console is shown on page 17.)

These predictions assume an almost blind faith in man's ability to program the middle manager's decision functions in a way that covers (practically) all exigencies. From our perch, too much depends on man's knowledge of himself, and on his understanding of how he does—and how he should—solve problems. Certain research in this area is very promising, notably the work of Herbert Simon and his colleagues in simulating human cognitive processes. Our feeling is simply that whereas man's scientific and technological prowess can shoot ahead by light years in a small interval of his lifetime, man's comprehension of himself tends to advance in relative increments more the size of microns. The development of the psychoanalytic movement since the time of Freud is a case in point.

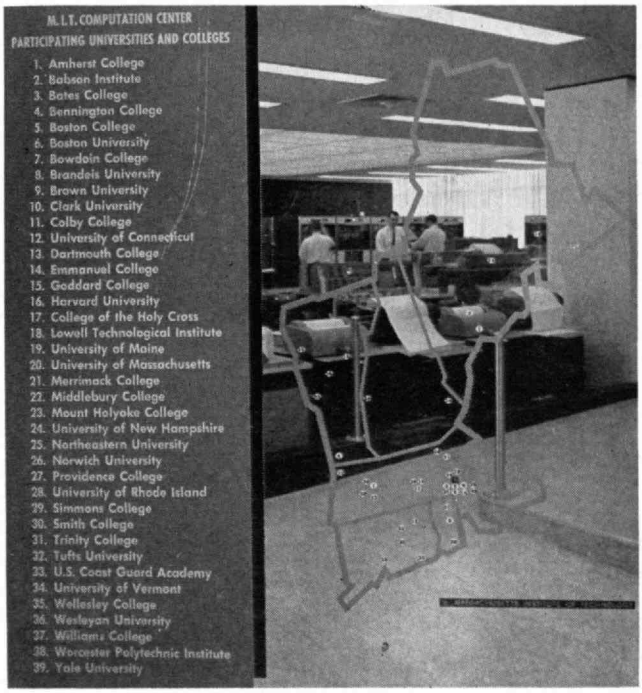
Another difficulty with the predictions of Leavitt and Whisler is that they sidestep economic considerations that in large part must govern the extent to which computers eventually displace managers. Simon expresses this point by an analogy with solar energy:

> Technologically, it is today feasible to get all our energy directly from the sun . . . [but] the capital investment required for direct conversion of the sun's rays to heat is so large that only in a few desert climates is the process even marginally efficient.

A second way of viewing the future impact of automation on management leaves middle management considerably more intact. This view (1) recognizes the theoretical difficulties that obstruct extensive automation of decision making; (2) echoes Simon's attention to comparative economics; and (3) acknowledges the subtleties of man-machine interaction. Melvin Anshen expresses this point of view as follows:

> Predictable gains in automated information-processing will bring about a substantial transfer of responsibility for making programmed decisions from managers to machines. However, this need not lead to a withering away of middle management. Rather, automation will open new opportunities for more effective performance of the decision implementation functions that often are slanted or handled within an unduly narrow context. Beyond this, it opens the possibility of bringing about a more imaginative attack on those aspects of management performance with which top-level executives are most dissatisfied—the creative activities of problem identification and decision implementation.

Anshen cites the example of a plant manager who for many years had devoted up to two-thirds of his time to conferences with other managers and to complex decisions. A computer was programmed to make the decisions. Within a year the manager reported that supervision of the computer's performance and administrative discussions of its decisions were claiming only



Workers in other New England schools now bring problems to the M.I.T. Computation Center in Compton Building.

about 10 per cent of his time. In the manager's words, this is how he spent the remaining 90 per cent:

> First, I now find myself free to take a look at the operation of the plant as a whole, as a system of materials, machines, and people, and to think about how to introduce changes in that system to make the operation more profitable. I did a little of this before . . . but I was always being dragged away . . .
>
> Second, I have more time to spend on personnel problems. We've never had a major labor relations trouble spot here, but we sure have had a series of minor upsets, dissatisfaction with the grievance procedure, cases of inept foreman-worker relations, things of that sort . . . I can sit down now and talk with union leadership from time to time, and on the basis of what I have learned we are going to institute a program of foreman training that should make a big contribution toward smoothing out a lot of the friction.
>
> Third, I've got the time to take an active role in a couple of community projects. I think this will help the company's public relations here in town and will broaden my own education . . .
>
> Finally, I can spend more time on understanding relationships with other parts of this business. I've been able to visit a couple of our warehouses and a few of their customers and find out what their problems look like . . . If your question is: "Have I got idle time on my hands?" the answer is emphatically "No." I'm not doing what I used to do. I think I'm doing more important things that never used to get done . . .

Anshen believes that the impact of automation on management will be "much more evolutionary than revolutionary. This is a distinction that puts a premium on accurate prediction, since anticipation of change can lead to more intelligent administration of the innovative process itself." He cautions top management to think more creatively about the introduction of computers, not as replacements and usurpers in the middle-management domain, but as enlargers of this domain.

John Glenn's Role

We share this second point of view. We also find middle managers retaining important roles in the future. Moreover, we see similarities between the roles of tomorrow's middle managers and those of our astronauts today. John Glenn, for example, was a central participant in the whole developmental process leading up to his orbital space flight. During the flight he did little more than rest, eat, and push buttons. But he was ready to fire retrorockets if his space ship veered off course, and he was prepared to deal with the unforeseen and the unknown. Throughout the flight, Glenn was in constant communication with "top management," and upon his return to earth, he was able to provide his colleagues with incisive reports and detailed recommendations.

The middle manager of the future will push buttons too; but like Glenn, he will know a great deal about what happens when he pushes, and why. (Unlike Glenn, he will have his feet primarily on the ground.) He will understand the results which his computer produces, and he will be ready to take corrective action when he feels its decision making is too inflexible. Often he will operate in a man-machine loop with the computer, and provide a vital human link in its decision chain. He will continually review his automated operation, examine it critically for possible improvements, and submit his suggestions to top management for modifications in the operation when he feels they are necessary.

Like Glenn, the manager will have a certain amount of routine in his job, and the job will be much more highly programmed than it is today. But, as Simon points out, it will not therefore be "less satisfying or less creative." If anything, the intellectual adventure and challenge of the job will be increased.

Let us speculate, for example, on the nature of the job of managing a Sears-Roebuck catalog-sales operation in 1975. M is the manager. He regulates the flow of $1 billion annually in customer purchases from the moment each customer dials his order to the moment the merchandise requested arrives at the pickup station or delivery truck. M spends a good deal of his time in front of a flow panel, attentive to irregularities in light patterns that he has learned to recognize as trouble spots. Depending on the nature or persistence of a difficulty, M either decides on an adjustment in the controls at his disposal (assisted by a simulation program which pretests his decision), or calls upon a staff specialist to investigate the troublesome problem with a view to its elimination or explanation. During periods when M is not watching the flow panel, he may be conferring with one of his associates, managers L and N. L has responsibility for stock control and inventory replenishment, N has responsibility for designing the next customer catalog, and each is concerned with some 250,000 catalog items. Both L and N use computer programs that feed directly and automatically on the data generated by M's operation. For the most part, the three managers are spared the unnecessarily long delays and extensive clerical errors that were characteristic of their operations just 10 years earlier.

The managers' jobs are indeed more programmed than they were before, but they also are less hectic, more interesting, and in clearer relation to the total company picture. The jobs contain more routine than previously, but this could be a blessing. Routine can afford quick gratification, just as chocolate can afford quick energy. And gratification from accomplishment, whether the source is completion of a routine task or solution of an important problem, is as essential to the manager as energy is to the athlete.

Recent Trends in Computers

In discussing automation, we have considered in turn blue-collar laborers, clerical workers, and managers. Peering into the future with our glass focused on management, we have distinguished the possibility of fundamental changes in the very nature of the management process. These changes have the potential for bringing vast benefits to industrial enterprise, but they require that the computer be woven into the fabric of management in a manner that has no precedent. What are the prospects that this will take place?

Traditionally (if you will allow the use of this word to refer to the span of years since the computer was first developed 20 years ago), executives have regarded the computer from a distance. To them the traditional computer is a large, expensive, somewhat mysterious machine with a single access route taken only by junior technical staff. Since the access route is complicated, often congested, and full of pitfalls, use of the computer by management itself is practically nonexistent. Computer results generally come to management in the

(Concluded on page 42)

Trend Of Affairs



An Oral Science Program

A FOUR-YEAR GRANT in excess of $500,000 from the National Institute of Dental Health has made possible a pioneering graduate training program in oral science at M.I.T. Under the direction of Professor Robert S. Harris, '28, of the Department of Nutrition, Food Science and Technology, it will emphasize scientific disciplines concerned with fundamental solutions to problems met in tissues of the mouth such as the teeth, gums, tongue, and salivary glands.

"The solution of these problems requires a more extensive training than dental investigators, practicing dentists, peridontologists and similar practitioners have had in the past," says Professor Harris. "We hope that as a result of this academic and research program our students will develop the intellectual self-reliance that comes from a mastery of fundamentals and the competence that results from the skillful application of that knowledge to complex problems.

"A good example of the importance of these fundamentals is the increasing evidence that food and nutrition are extensively involved in disorders of the mouth. Dental caries do not occur unless certain strains of bacteria are present in the mouth, and unless food particles are present to supply a nutrient medium for microbial growth.

"The elements and compounds in foods may accelerate or reduce the development of tooth decay. We have found, for instance, that phosphates are highly effective in preventing tooth decay in animals. Thus, food is important, biochemistry is important, and especially nutritional biochemistry is important to the solution of problems of the oral region. The results of our research on the relation of food and nutrition to dental caries lead us to predict that the dental problem will be solved within 20 years."

Two kinds of scientists interested in a career in dental education and research will be trained under this program. Postdoctoral associates who have recently graduated from dental schools and hold a D.D.S. degree, and graduate assistants who hold B.S. degrees in chemistry or biology. Thus, students with dental and with chemical backgrounds will converge to work for doctorates in nutrition with specialization in oral science. Postdoctoral students will spend one summer session at the Institute of Nutrition of Central America and Panama (INCAP) in Guatemala taking summer courses and participating in field programs. Some students may be permitted to do part or all of their thesis research in other departments at M.I.T. or at INCAP.

The Faculty members in the program represent a number of related disciplines, and professors and scientists from local dental schools and institutes will assist as special lecturers, consultants, and collaborators.

The Radiochemists Have Moved

THE M.I.T. Radiochemistry Laboratory, which was formerly jammed into Building 6, has been moved across the railroad tracks to the Institute's new research row on Albany Street. There it is now immaculately housed in part of what was formerly the Ward Bakery, between the National Magnet Laboratory and the nuclear reactor.

Its people are concerned with products of nuclear fission, decay schemes and other properties of radioactive isotopes, and the use of such tracer materials in chemical interactions. Their new quarters were especially planned and equipped for work of this kind, and their proximity now to the reactor facilitates the study of isotopes that decay quickly.

Undergraduates studying radiochemistry have permanent laboratory facilities for the first time in one of the new rooms, and 12 two-man laboratory rooms are now available for advanced students, in addition to offices and seminar rooms. The equipment includes 18 fume hoods, so ventilated as to minimize interference with the air conditioning; a "hot lab," so placed that it later can be connected by a pneumatic tube to the reactor; and three "counting rooms" containing appropriate new electronic apparatus.

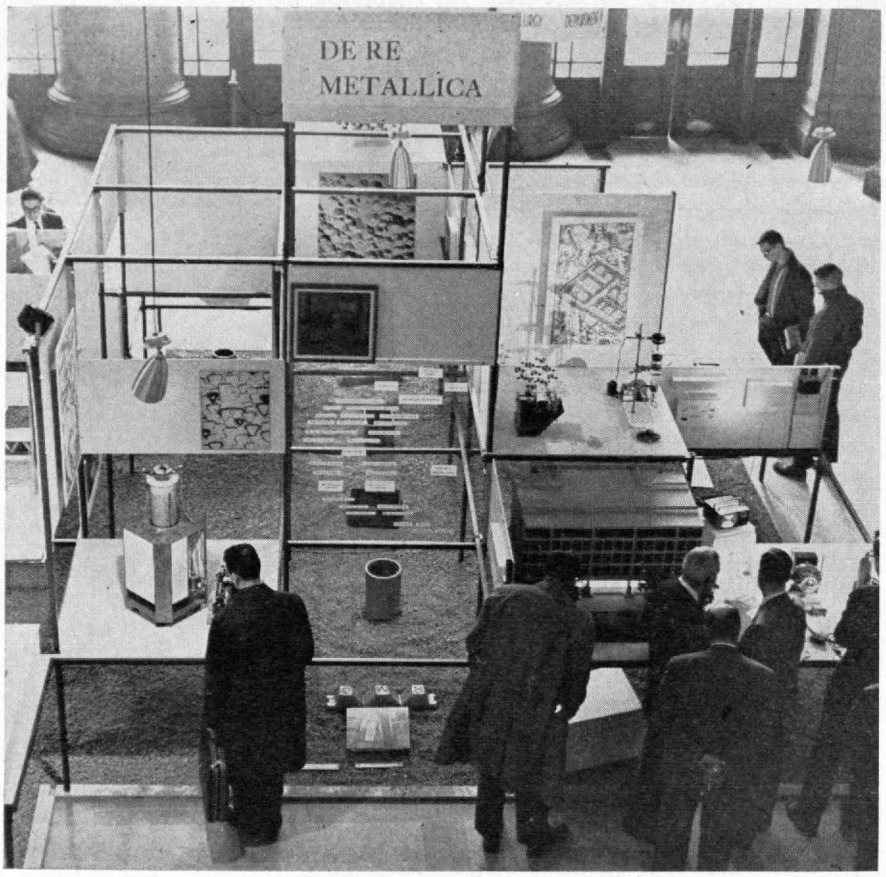
Professors Charles D. Coryell and John W. Irvine, Jr., '39, and Assistant Professor Glen E. Gordon are in charge. Professor Coryell is now in Europe and will return soon to an almost shockingly tidy and uncluttered office. Most of this laboratory's support has come from the Atomic Energy Commission; this move was made possible, however, by funds that M.I.T. and the National Science Foundation provided.

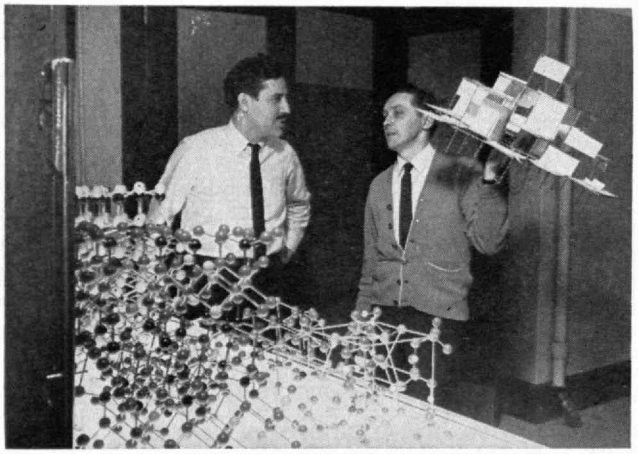
Spring Brings a Display of Modern Materials

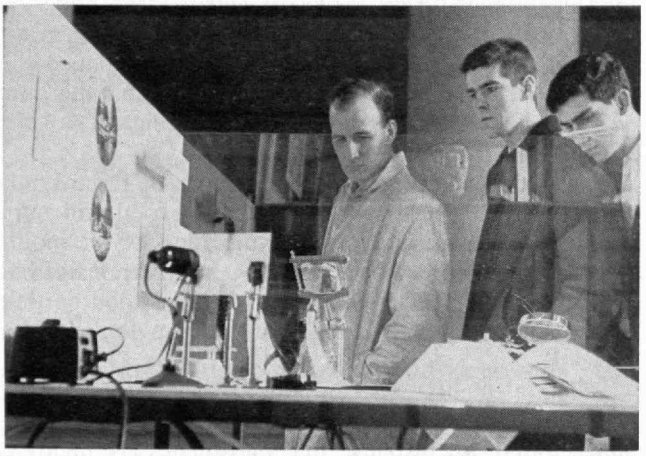
METALLURGY blossomed under M.I.T.'s Massachusetts Avenue dome this year the same week that crocuses burst forth outdoors. The "De Re Metallica" exhibit drew its title from a book by Agricola published in 1556, and engravings from the book provided the background for crystals, glass fibers, and other pretty things now used in electronics, energy conversion, and space technology.

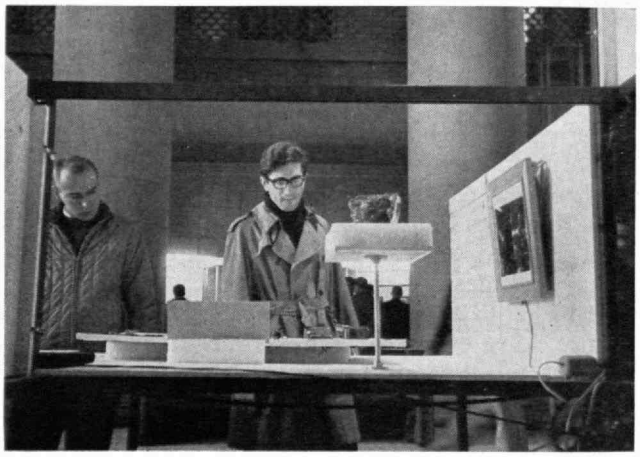
The show was intended to acquaint students with the broadening spectrum of materials science, and there were things to do as well as see. Instruments such as the electron microbeam probe and the Mueller field ion microscope were exhibited. So, too, was a model of the future materials science building.

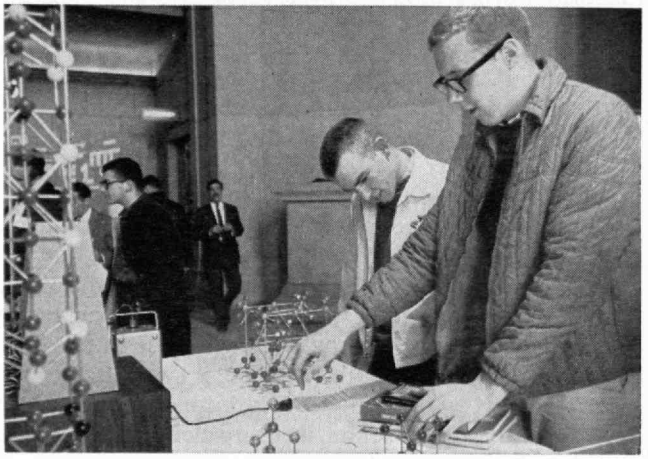
Alfred M. Duca, Boston sculptor and a research associate in metallurgy (at left below), and Arthur W. Mullendore, '53, Assistant Professor of Metallurgy (shown with a model of the supporting framework in his hand), shared much of the responsibility for the show.











A Walking Magnet

A 240-TON bubble-chamber magnet called Colossus has been taking practice steps at the Cambridge Electron Accelerator this spring. Squeaking and rumbling, the green magnet rises on its prairie-gold hydraulic legs, swings forward, glides toward the floor—and, kerplunk, it has taken a six-inch step.

The walking magnet eventually will house a 40-inch bubble chamber, one of the largest anywhere, which will be too heavy for the accelerator's 40-ton crane to move. A team of researchers from Brandeis, Brown, Harvard, M.I.T., and Padua (Italy) is assembling this bubble chamber, and the walking device was built by the Improved Machinery Company, of Nashua, N.H. Its legs will enable it to shift the bubble chamber back and forth and from side to side as may be required.

Its movements resemble those of a man on crutches, but it has four legs, connected by four crosspieces. These shorten or lengthen in response to hydraulic pressure on pistons within the legs.

It was named after the Colossus of Rhodes, one of the Seven Wonders of the Ancient World, and it is but one of about 40 magnets on the floor of the experimental area of the accelerator, all of which have distinctive names. Most of them have been named after some god or hero in Greek or Irish mythology, but six bear the names of the wives of Henry VIII of England.

Underwood-Prescott Lectureship

STARTING next fall, a lecture on food science will be given each year at M.I.T. in honor of the late Professor Samuel C. Prescott, '94, and William Lyman Underwood, '98. A committee headed by Professor Samuel A. Goldblith, '40, will choose the lecturer and an endowment will provide for his honorarium and traveling expenses from anywhere in the world.

The Alumni thus memorialized revolutionized the canning industry by their research at M.I.T., which made it possible to put time and temperature sterilization requirements for canned foods on a scientific basis. Establishment of the lectureship was announced jointly by President Stratton of M.I.T. and Raynor M. Gardiner, chairman of the board of trustees of the Wm. Underwood Company, the oldest American canner.

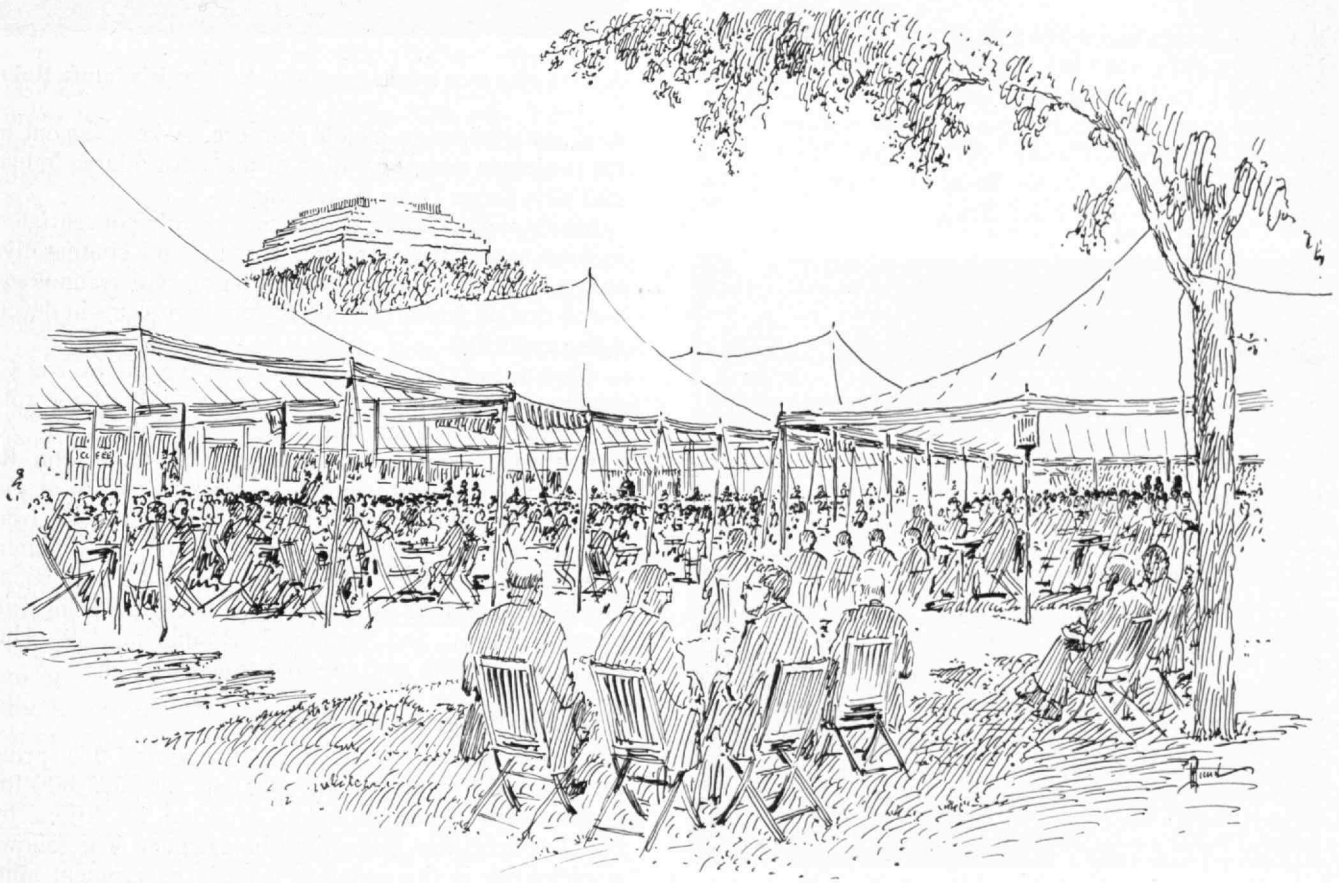
A Lobdell Room Is Planned

AT ITS 365th meeting, the M.I.T. Alumni Council heard President Julius A. Stratton, '23, describe his recent travels, and was informed:

¶ By Leo M. Beckwith, '35, that the Executive Committee upon recommendation of the Alumni Fund Board had reserved $125,000 for the new Student Center, soon to be built, and that its main dining room will be known as the Lobdell Room in honor of the late H. E. Lobdell, '17.

¶ By Paul Wing, '34, that the Alumni Day program on June 10 will include explanations of inertial guidance, lasers, magnets, and computer applications in the forenoon, and discourses on poetry, art, and music in the afternoon.

President Stratton gave his impressions of the people, leaders, and problems of Nigeria, Kenya, and India, and spoke enthusiastically of the work of M.I.T. men in those countries. William L. Taggart, Jr., '27, President of the Association, presided at this gathering in the Faculty Club on March 25, and 149 Alumni and guests were present.



The Great Court will again be the scene of the M.I.T. Alumni Day Luncheon June 10 (see "A Lobdell Room" above).

A Record-Breaking Particle

JOHN LINSLEY of the M.I.T. Laboratory for Nuclear Science has reported the detection of a cosmic-ray particle with an energy twice that of any previously recorded. This 10^{20} electron volt particle produced a great shower at the laboratory's Volcano Ranch station near Albuquerque, N.M., that Dr. Linsley described in the February 15 issue of *Physical Review Letters*.

The particle (probably the nucleus of a hydrogen atom) came out of the sky, he says, with three billion times as much energy as can be given to a particle in the big synchrotron at Brookhaven, N.Y. In fact, Dr. Linsley observes, "a man-made synchrotron for producing particles like the one which made the February shower would need to be as large as the earth's orbit around the sun."

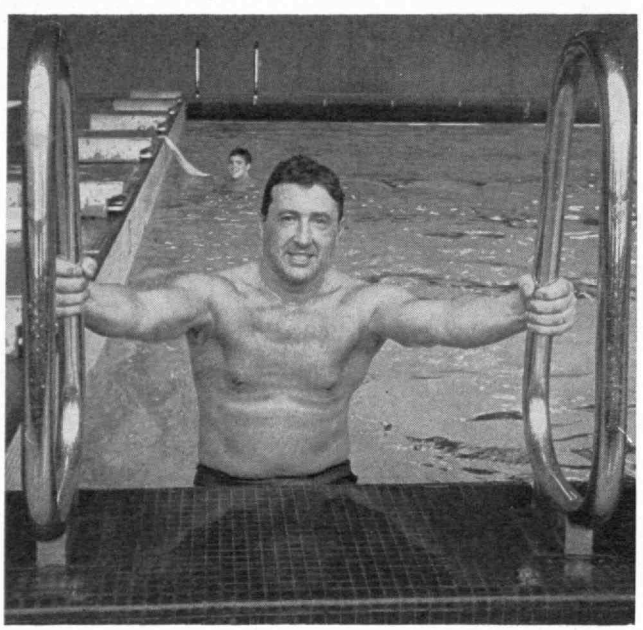
Where do such particles come from, and how do they acquire so much energy? Physicists have been discovering particles of greater and greater energy in recent years. "The latest record-breaker had something like a hundred times too much energy to have been produced in this galaxy," according to Dr. Linsley. "It must have come from some other galaxy which is more active than our own, possibly one of the 'radio-galaxies,' those peculiar astronomical objects which are powerful transmitters of radio waves."

The Volcano Ranch station has been operated for several years now by M.I.T. under a grant from the National Science Foundation.

In the Swim

WHILE others were walking 50 miles this spring, M.I.T. men were swimming 50 miles. Seventy-two lengths of the Alumni Pool make a mile. Al Texeira, who attends the pool, swam two miles a day for 25 days after working hours to become the first person with proof of having swum 3600 lengths in the pool.

More than 100 others have followed suit, at various paces, and recorded their mileages on charts at the pool. When they've gone 50 miles, they get a Red Cross badge, pin, and certificate.



Al Texeira has popularized the 50-mile swim at M.I.T.

Funds for Urban Studies

THE FORD FOUNDATION has awarded $600,000 to M.I.T. for the support of the Joint Center for Urban Studies operated co-operatively with Harvard University, and the Corporacion Venezolana de Guayana has added $400,000 to its 1961 contract with M.I.T. for the Joint Center's services.

Its scholars are analyzing and will submit recommendations for investment strategy in the Guayana region of Venezuela which is sometimes called "the future Ruhr of South America." Industrial development which already has started there includes a dam on the Caroni River, a government-owned steel mill, and rail-



A ferry stop now marks the site of Venezuela's future Ruhr.

road installations to handle iron ore. A key element in the project is the preparation of plans for a large industrial city, Santo Tome de Guayana.

Much of the Center's work is currently concentrated in four areas: the structure, growth, and comparative analysis of cities; urban transportation and technology; urban design; and urban and regional problems in developing countries.

Alumni associated with the Center include Martin C. Anderson, '62, who has completed a study of the role of private investment in urban renewal; Kevin A. Lynch, '47, Donald S. Appleyard, '58, and John R. Myer, '52, who have written a book, *View from the Road,* to be published shortly; Aaron Fleisher, '47, who is investigating systems of transportation for different patterns of land use; A. Scheffer Lang, '49, and Richard M. Soberman, '61, who have been analyzing rail transit systems; and Marvin L. Manheim, '59, who has been studying land use and transportation.

African Program Continues

OVERSEAS DEVELOPMENT grants announced this spring by the Ford Foundation included one for $327,000 for continuation of a fellowship program in Africa by M.I.T.'s School of Industrial Management. The fellows participating in this program serve in government ministries and development posts in trade and industry.

The Technical Man and Culture

Some remarks about the pursuit of happiness prompted by recent articles in The Review

BY EDGAR I. WILLIAMS, '08

BACK in the first decade of the century a Tech man was not classified as a college student but as a "grind." This implied that he, or she for that matter, had entered a kind of mathematical limbo devoid of warm human values to lead a sort of bloodless sexless life in search of scientific facts.

The characterization was, of course, not entirely true but the prescribed cultural summer reading suggested that there was some realization of the shortcomings of the courses. I never would have read Motley's *Rise of the Dutch Republic* if I had not been badgered into it. Neither would I have read Simon Newcomb's *Astronomy for Everybody*. The latter suggestion, however, was playing a bit offside on the part of the Faculty.

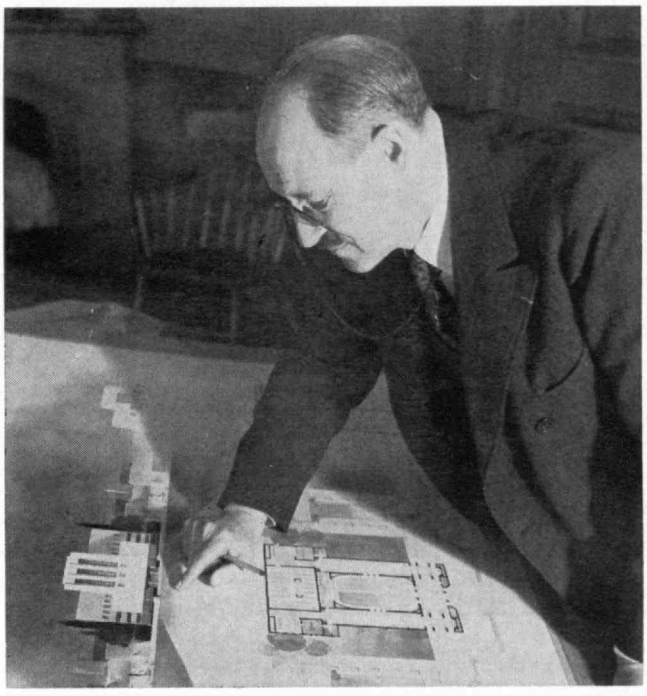
We were a little better off in Course IV because no course in architecture could possibly have been conceived without major concern for the humanities and the arts. Tech has always done a good job with its Course IV and although the emphasis on major objectives has shifted from time to time it has always been in the top rank of architectural teaching.

Two recent articles in The Technology Review brought forth some thoughts which indeed have prompted me to write this article. One was Vannevar Bush's ['16] article in the November, 1962, issue entitled "Two Cultures," and the other "The Poor Rockefellers" by John W. Rockefeller, Jr., '20, in the December, 1962, issue. Although far apart in subject, content, and purpose, they both had to do with things beyond logic and dealt with people rather than scientific doctrine.

It is an obsession of mine to note how few of our people are aware of what our Declaration of Independence is basically about. It states that man's right and purpose is the pursuit of three objectives, i.e., life, liberty, and (let me emphasize this) the "pursuit of happiness." It does not say power, or money, or superior rank, but happiness.

Dr. Bush's article was concerned with matters of the spirit as well as the mind to the end that together they lead to lives of accomplishment and satisfaction. I have too much respect for Dr. Bush to argue points having to do with two cultures. I disagree with the thesis, but the lesson the article teaches is of the highest order and is in order when delivered to Tech men and women.

Mr. Rockefeller's article throughout breathed a spirit of camaraderie which in essence has to do with the pursuit of a warm co-operative life. The article brought out memories of my own as it no doubt does others. The matter of trivia seems to me to be of real importance if serving to point up incidents sometimes of the highest significance in our lives. It can induce respect, even reverence. For example, Professor Cross, whose Christian name I forget, gave a course on light. It was an optional course given late in the afternoon and, as I recall, without school credits being involved. He was a quiet, bespectacled, old gentleman with a narrow bald head. He always wore a black morning suit with a heavy watch chain looped from pocket to pocket of his vest. He would take his place at the lectern well ahead of the hour with his eye on the clock. Then slowly, deliberately he would take two watches attached to the chain from his vest pockets, carefully lay them on the lectern in front of him, check all three timepieces and when satisfied that the moment had come, give the signal to a waiting attendant to close the door. No thought could ever enter my mind but that what Professor Cross told us was absolutely accurate.



The late William Emerson, Dean of Architecture at M.I.T.

Then there was Professor Thorndike who gave an obligatory course called, "Sanitary Science," to all freshman architects. In laying down the ground rules at the first session he told us there would be no tests or examination but, "I will require that you bring your bodies here and on time; I hope you will also bring your minds." The course was intensely interesting. Dr. Thorndike could build up a fearful crisis of disease or

contamination. "The dead rat is more dangerous than the roaring lion," he would blurt out and we would cringe in fear.

In the Tech show of 1909 there was a hit song with a chorus that went:

I'm an M.I.T. Professor
I'm a patent air compressor
I work upon the principle
Of never ending flo-o-o
Of highly heated atmosphere
That fills the student's soul with fear
There's nothing I don't know.

I am not inferring that all professors induced fear. I was associate professor at M.I.T. for a short while, and I know. But going back again to old days the students were not all grinds. One of my classmates, a Bill Adams, often served to lighten our burdens with his actions. We used to use wooden matches, the good old kitchen kind, in the physics and chemistry labs. Bill was very dexterous. He would light a match and toss it ever so gently in the air and catch the unlighted end the way a juggler does when twirling Indian clubs. It was perceptible that the flame held almost still in air while the matchstick revolved about it. When I think of the thousands of matches we fellows used imitating Bill Adams and the hours wasted I cannot condone our actions but I remember the episodes and the course with a sense of satisfaction. We took the work seriously all right but a relief of tension isn't always bad.

When the new buildings for the present site in Cambridge were being planned a great deal of research went on. The Massachusetts Institute of Technology could not afford mistakes in its planning. Slowly but under pressure experts of all kinds made their estimates of what a leading scientific institution would need for the future, a future indiscernible except for what one might liken to an ominous glow in the distant sky. That glow surely was portending the approach of a scientific surge that would affect all our lives.

When Welles Bosworth, '89, was finally chosen as the architect, his concept of a calm classic character for the design became a matter of primary importance. As the scheme progressed great pains were taken to assure a handsome appearance of the buildings. For example, site lines were taken from clear across the Charles River to determine the height of the roof parapet so that the stair bulkheads would not be visible to mar the outline of the buildings. Mr. Bosworth guided the development with iron hand. And if men, even in those days of classic architectural chastity, questioned the integrity of the dome as a functional element, they accepted it as an aesthetically required motif to make the composition complete. On the functional side, the long elastic space provided was wisely conceived.

Today architectural concepts are sterner and harsher, but with some generosity from those who want no part of the past it must be recognized that the original buildings have aesthetic and cultural values.

While reminiscing against such a background I want to illustrate how difficult it can be to make a respectable and decent marriage of aesthetic and practical engineering ideas. In 1934 President Karl Compton asked Professor William Emerson, Dean of the School of Architecture, to explore the possibilities of establishing a course of industrial design at the Institute. Although the importance of certain industrial designers was very much in the public eye at the time and the name, "Industrial Design," already carried glamor, no such course had been created. Professor Emerson arranged a conference. President Compton was accompanied by Vannevar Bush, '16, and Professor Emerson's forces consisted of President Emeritus Charles Eliot of Harvard; architects Harry J. Carlson, '92, of Boston (a member of the M.I.T. Corporation); Frederick W. Garber, '03, of Cincinnati; Ralph T. Walker, '11, and I, of New York. I am not certain that another architect was not present.

For a long day the subject was intensely discussed, guided largely by Dean Emerson's broad agenda. What should be the subjects of such a course? Should not a large proportion of the course be on aesthetics and on "art"? How does one go about teaching invention? Can creative thinking be taught at all? How do architectural courses make designers? As the discussion warmed up and the ideas became more and more intricate, I stole a good look at both President Compton and Dr. Bush while Ralph Walker was energetically discussing some point or other with overtones which perhaps only architects could comprehend. The ideas were sailing over both their heads. I looked at Dr. Compton's steel blue eyes and I wondered whether he thought that, if we represented intelligent architects, then all architects must be a little crazy.

There was some humor, it seemed to me, in the idea which some member of the staff had that concepts of beauty could be induced in the minds of hard practical engineering students by hanging colorful renderings made by architectural students in the corridors near the engineering classrooms. They would act, it was reasoned, to produce some sort of contagious virus which might stimulate creative and harmonious understanding in the minds of those who passed by. The idea was noted but not acted upon.

Vice-Admiral Hyman G. Rickover is quoted as saying, "The definition of the educated man is one who understands the basic fundamentals of what makes the world around him intelligible. The object of education is not salable skills, it is to develop the intellect." I go further and say that we can do worse as Americans than follow the precepts of our Declaration of Independence, as laid down in the four words, "the pursuit of happiness."

Nothing I have said is intended to convey that life at Technology is devoid of cultural pursuit. Tech is indeed fortunate to have a Dean of Humanities and it is doubly fortunate in these particular times that Dean John E. Burchard, '23, is holding forth there. Nobody could know how many otherwise statistically minded students, or men and women at large for that matter, have had a peep at a world of warmth and delight through a chink opened by Dean Burchard in the wall of harsh realities surrounding us.

So, to sum up, here is my sermon induced by Dr. Bush's and Mr. Rockefeller's recent articles: Engineers, scientists, men and women of precise technical pursuits and compulsions can find a wider and more satisfying life by delving into the mysteries affecting human behavior which do not relate to logic and technology but are within the realm of culture and surely make life fuller and happier.

Earth Science in Civil Engineering

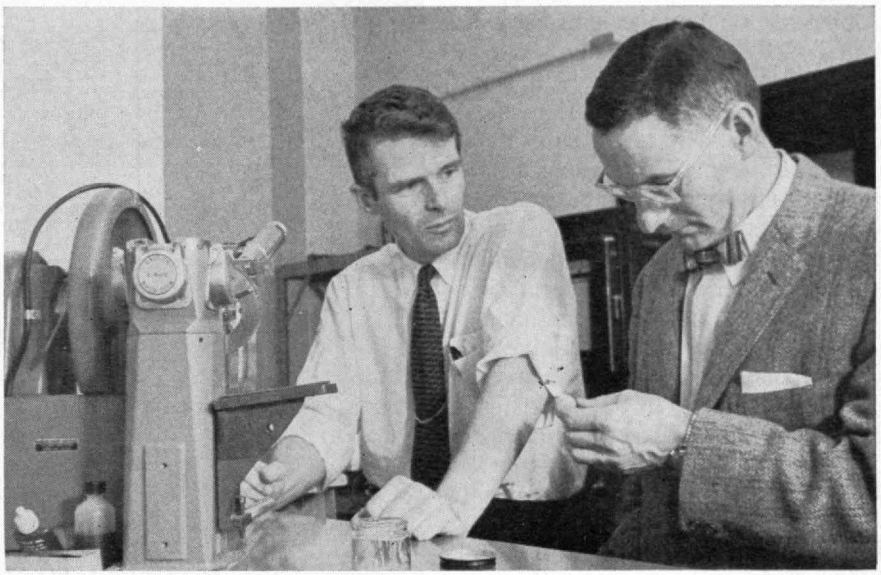
Some examples of current research pertinent to the problems that the future builders of facilities for mankind will face

BY PETER S. EAGLESON, '56
Asso. Professor of Civil Engineering

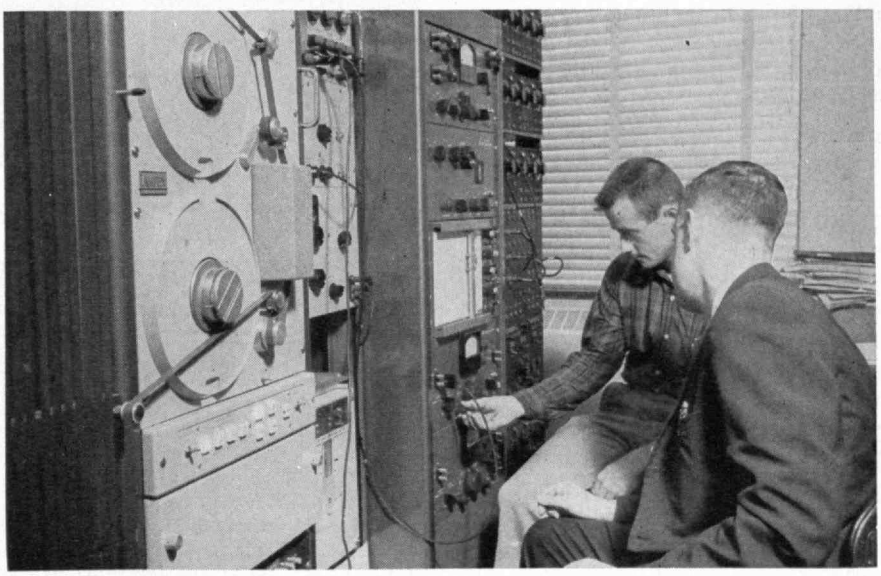
OVER THE YEARS civil engineering education has tended to become a collection of separate and often unrelated programs in numerous engineering specialties. This is incompatible with optimal preparation of students for engineering of the large-scale systems of constructed facilities which today are becoming commonplace. The M.I.T. Civil Engineering Department, therefore, in seeking to play a unique role in civil engineering education, and in recognition of the need for other than the traditional groupings of personnel, is now focusing its educational and research efforts on three major areas: 1) The applied earth sciences; 2) structures and materials, and 3) civil engineering systems.

The last two areas have received some attention in recent issues of The Review,* but little has been said about the extent and nature of the Department's activity in the Applied Earth Sciences.

A large body of effort in the earth sciences is directed toward the exploitation, adaptation, and control of the materials and dynamic processes of the earth. These efforts are distinguished both by their scale and by their motivation—which is most often to support some specific human activity. For the physical scientist, they may include such activities as geophysical prospecting, long-range weather forecasting, control of climate, and a host of defense-related problems concerning information transmission and retrieval. For the civil engineer, they involve the behavior of near-surface earth materials, the microstructure of natural dynamic processes, and the interactions of these with various kinds of constructed facilities. The civil engineer's role in providing both man's



R. T. Martin and T. W. Lambe, '44, study soil by x-ray diffraction.



E. F. McCaffrey and F. E. Perkins, '55, use a computer to study turbulence.

FOR FURTHER information concerning these and other activities an interested reader may write to Professor C. L. Miller, Head of the Department of Civil Engineering, for a copy of a new booklet, "Educational and Research Activities in Civil Engineering at the Massachusetts Institute of Technology."

* See "Models Aid Tomorrow's Builders," June, 1962, page 28; and "Computer Models of Roads," Jan., 1963, page 20.

constructed facilities and his water supply necessitates his involvement, and the M.I.T. Civil Engineering Department's current research program in this area involves more than half of the Faculty and about $500,000 annually in contract research funds.

Some examples will illustrate this program's nature and value:

¶ X-ray diffraction studies of clay fabric by R. T. Martin have shown for the first time that the structure of a soil skeleton often can be represented as an hexagonally anisotropic material. However, current theories of stress distribution in soil, which form the basis for predictions of the soil response to loading, generally assume the soil fabric to be isotropic. As a result of Dr. Martin's findings, his colleagues are studying the stress distribution produced in an hexagonally anisotropic soil mass by loading patterns representative of those encountered in actual engineering situations. It is anticipated that the results will provide upper and lower bounds for the stresses to be expected with the same loading patterns under the variable soil conditions found in the field.

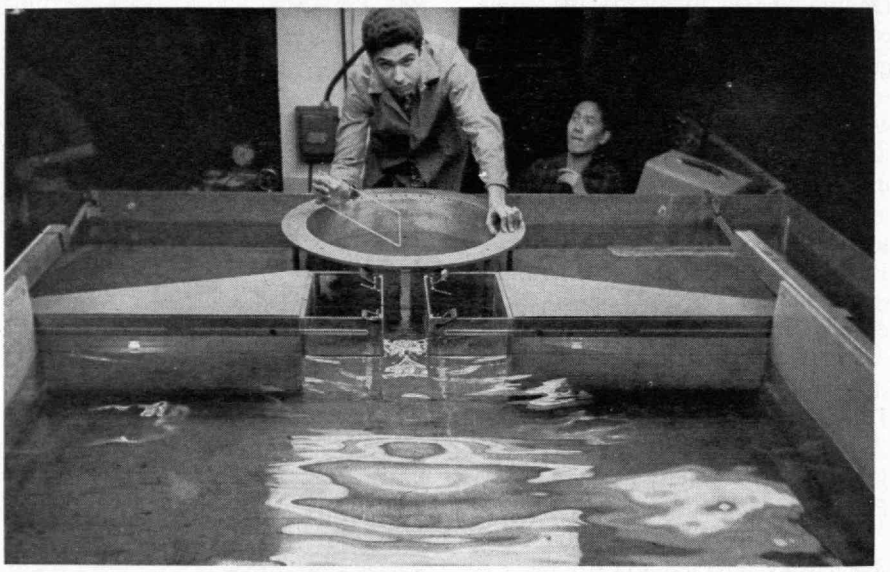
¶ The entrainment, mixing, and transportation of particles by turbulent fluid flow enter into many important processes such as the movement of sediments and wastes in rivers, canals, harbors, and estuaries. A common feature of all these economically significant problems is the modification of the structure of the fluid flow by the presence of the particles. For example, the ability of the flow to entrain and diffuse oxygen and to disperse wastes is affected by the local concentration of suspended material. Professor J. W. Daily is using inert particles, both neutrally buoyant and heavier than the fluid, in laboratory studies of the effects of particle shape, density, flexibility, and concentration on the mechanics of fluid turbulence. The ultimate goal of this research is an improved ability to specify and control the mixing, dispersion, and energy requirements of flowing suspensions.

¶ Some cohesionless soils tend to decrease in volume when sheared rapidly, and when full of water they then assume the consistency of a

(*Concluded on page 40*)



E. L. Bourodimos, '63, measures the effectiveness of a tubular breakwater.



Q. Fattah, G, studies wave-induced oscillations in coupled basins.



R. M. Males, '63, and C. J. Galvin, '59, record currents at laboratory beach.

The Hobby Shop Is Growing, Too

It will move soon to bigger and better quarters in the Armory, but for Bob McCadden its golden years came right after the war

BY SAMUEL JAY KEYSER

TWENTY-SIX YEARS in one place is long enough, I suppose," says Bob McCadden of M.I.T.'s Hobby Shop located, since its inception, in the basement of Building 2. Bob has been with the Hobby Shop 20 years, the last 10 as staff foreman, and talks softly as he moves with sureness like that of a blind man through its maze of wood scraps, power tools, and electronic gear.

"Started right here in 1937. That was before me, of course. I didn't come around until just before the war." He pauses to demonstrate the precision accuracy of a collet lathe in the metalworking area of the student-faculty organization's shop. When the high-pitched whine subsides, he goes on, "We're moving over to the Armory basement in the fall. Whole new setup. More space. Better ventilation. Closer to the other activities." But as he passes through the sawdusted, oil-stained rooms of Building 2-051, familiar to six generations of M.I.T. students and staff, you know the journey will bring mixed emotions to him.

Things expand. Last summer the Chemistry Department asked for the space now occupied by the Hobby Shop. The Hobby Shop's Faculty advisory committee, headed by Jack Sheetz, '42 (Director of the Development Office), and composed of Dean Holden and Professors Benjamin Averbach, '47, and Carvel Collins, met with Ted Jordan (Architect, Physical Plant Department) and decided on a new layout in the Armory.

Over there the shop will have two darkrooms instead of one to meet the growing demand, and a new activity, ceramics, will be added. The two center rooms, for woodworking and metalwork, will be surrounded by smaller rooms for welding, grinding, paint-spraying, electronics, and printing. There also will be a library, with room for handicrafts.

"The layout is optimal," says Jordan. "For safety as well as the life of your machines, you should really keep the grinding, welding, and the paint-spraying away from the rest."

Bush, Byrd, and the Boys

Who started the Hobby Shop? Nobody seems quite sure. McCadden thinks Vannevar Bush, '16, suggested the idea to A. C. Watson who was head of the old Museum Workshop Committee, but Bush isn't sure. "I always had a shop," he says. "When I was in college, I made a surveying machine. Built it and had it patented. Had to use the available facilities which weren't much good. So I thought about a shop," Bush admits, and recalls having found the space for the Hobby Shop in Building 2 when he was M.I.T.'s vice-president in 1937. Then he also suddenly remembers a stock of relays and contactors he's been saving to take down to McCadden, and says, "Thank you for reminding me."

Over the collet lathe there is a picture of a man in a naval uniform. The inscription under it reads: "Good luck and cordial regards to the students in the Hobby Shop," and it's signed, R. E. Byrd. "That was when Admiral Byrd went back into the Navy in '41," says McCadden. "The Hobby Shop and the Museum Workshop were still connected then. He left a lot of his equipment for storage right there." McCadden waves his hand in the direction of the milling machines. "Some dog sleds, cooking pots. Same gear he used on his arctic expeditions. The fellows in the shop kind of looked after it. Mr. Watson and Byrd were friends."

The Hobby Shop became an independent organization in 1946. The Faculty committee chairman was Professor Howard Bartlett, McCadden recalls. The shop was doubled in size in 1948 by adding an extra room, and the move to the Armory will increase its size half again. Last year there were 325 members. It has 275 now, and McCadden expects 350 next year. Moving closer to the other activities ought to raise the number. He thinks they'll need every inch available.

"Right after the war we had a smaller crowd, of course. But those were what you might call the Golden Years. The fellows came down here whether they had anything to work on or not. It was more like a club. Now the students are a lot more studious. They have a time to study and a time to work down here. More come now than ever before, but it's not quite the same."

He lights a cigarette and adds, "It may just be that I'm getting older." McCadden is only 39, but he has been in the Hobby Shop since he was 19.

Antiques and Cars

What kind of students used the Hobby Shop in the Golden Years? Well, McCadden remembers the vet who built a houseboat on top of a 60-foot coal barge because the housing situation was so bad. He built the parts in the shop and toted them to the barge anchored in the lower basin. Then there was the fellow who collected bits and pieces of junk, bureaus, dressers, chairs, thrown out of the old Westgate tenements. He reconditioned them in the shop, put up a sign in his room that read "Antiques" and, according to McCadden, they never stayed unsold more than an hour. "Name of Tom Haller, '51," says McCadden, "lived in a house overlooking the Roosevelt Raceway last I heard. Watched the races through binoculars."

George Burdick, '44, built a boiler for his 1928 Stanley steamer and gave Bob a ride when it was finished. "You used kerosene to fire the thing

up," Bob explains. "Damn thing took off in a cloud of dust."

Speaking of cars, one year the Hobby Shop produced both the first and second place winners in the Fisher Body contest. He thinks it was around 1948 when Charles Jordan, '49, won and was offered a top designing job with Fisher Body. McCadden, whose memories of old Hobby Shoppers seem inexhaustible, picks up a piece of metal in his path and stacks it against the wall. "We haven't had a single accident here in 10 years. Nothing very serious before that either."

In the shop's printing section, Bob points out the small hand press given to the shop by the Tech Letter Office and the larger one that came from Laboratory Supplies. The large 11 x 16-inch Peerless foot press came from the basement of the old Riverbank Court Hotel when M.I.T. took it over for dormitory space.

McCadden leans against a California job case and tells of Issay Stempnitzky, '45, and Jim Gurney, '45, who designed and built a portable spot-removing kit right there in the Hobby Shop. It was a little box with ten bottles, five with liquid and five powder. It came with a set of instructions, which combinations of bottles to use for which kinds of material and spot. Bob's wife said it was the best spot remover she ever used. For some reason they couldn't get it going. The only buyers were the local Chinese laundries. "They were both graduate students," Bob adds.

While he's talking, a student, Jim Macomber (Chemistry), wants to know where the wood screws are. He explains how he built a box last year for his cat. It was designed like a suitcase so the cat could be smuggled in and out of motels. Did it work? Last year that cat traveled 3,000 miles.

Boats Are Favorites

"Had a fellow here years back who worked on a problem for Ballantine Ale," Bob recalls. "Every so often they came up with a batch of bad beer. Had to throw it away, bottles and all. This boy worked steadily down here inventing a beer bottle decapper that worked on a cam. It came down over a case of bad beer, uncapped the bottles a case at a time and flipped itself up and over, ready for the next case. That way they could empty out the beer and save the bottles. He used to go down to New York and come back with plenty of cases to work on. Time there when we had more beer than we knew what to do with. He went to work for Ballantine right after he graduated."

Bob talks, too, about Bernie Goldhirsh, '61, who was teaching in a Prep School near Harvard Square last he heard. Bernie had never sailed a day in his life, but he built a trimaran in the Hobby Shop and sailed it in the Maritimes. He also remembers Garrett Shanklin, '52, who built a 20-foot cabin cruiser with inboard motor that was a beauty.

Boats are a common project. In 1959 Jerome Milgram, '61 (Naval Architecture and Electrical Engineering), built a 17-foot Thistle Class and won the New England Championship with it. In 1961 he built a second Thistle Class and won the championship again.

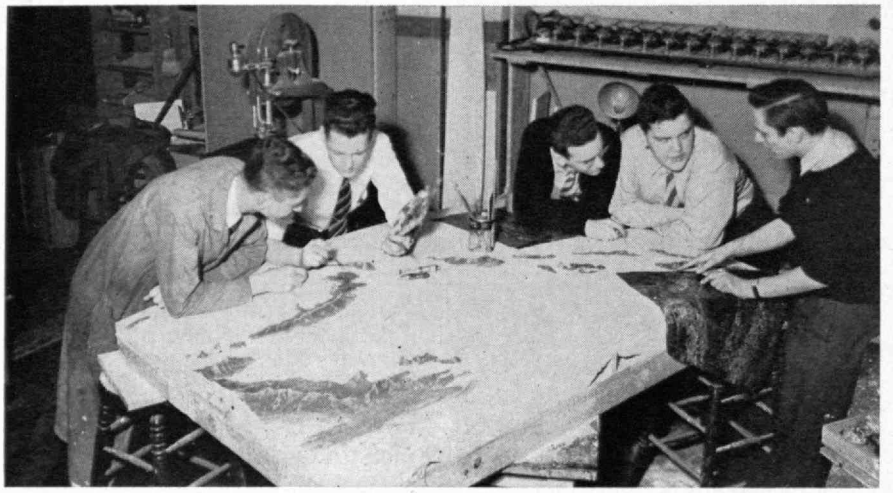
Milgram, who came to the Hobby Shop in 1956, considers himself one of the transition group between the Golden Years and the New Generation. "Then the shop was run pretty much by the students," he says. "There's a system where a member who does a project for the shop itself can be elected a journeyman, and a journeyman who completes a larger project for the shop becomes a master craftsman. He can use the shop even when Bob isn't around, so long as somebody's in the shop with him. It's a nice system. Not very grand privileges, but something to work for. Only when I first came, there was more interest in that sort of thing than now."

The Need Continues

Milgram explains the change in character partly by a change in M.I.T. itself. Over the years courses have become harder. Then, too, the generations after the war years were somehow more serious, more inclined to academics. Administering the Hobby Shop became an added burden which the New Generation threw off in the face of greater academic pressures and their own inward seriousness. Now Bob McCadden runs the shop with the help of his elected student foreman. This year's chairman is Victor Scheinman, '63 (Aeronautics and Astronautics), who, in the tradition of Hobby Shop autoists, is building a car, a small beetle-shaped affair with one wheel in front and one behind, like a bicycle, and two wheels on each side to stabilize it. It will be guided with a stick like an airplane and propelled by a motorcycle engine.

There is a certain nostalgia in the passing from the old to the new, even in a hobby shop. The departure for good and all of the Golden Years will be punctuated by the new quarters in the Armory basement, but though the times and the students may change, the basic need for such a facility does not.

Jerry Milgram thinks a student needs such a place not only for utility but for diversion. Dean Holden thinks a student needs a place where he can make and build and do. Bob McCadden thinks there are certain people who've got to use their hands. M.I.T.'s Hobby Shop, in the new quarters or in the old, is their answer.



Hobby Shop men produced a relief map of the southwestern Pacific in 1942. From left are Benjamin F. Pugh, '47, Milton E. Pugh, '47, Charles H. Hart, 3d, '45, Richard N. Lovett, '43, and Bradley Hahn, '45, working on it.





A senior authority on the Hobby Shop, Bob McCadden, is seen above in a tutorial moment, and lending a hand to Yuan Bo Chu, S, and Scott E. Blouin, '65, at a workbench. Discussing the shop's affairs with him below (at left) is Victor D. Scheinman, '63, the student foreman who currently helps Bob run the shop.



Institute Yesteryears

As recalled by the late H. E. Lobdell, '17

25 Years Ago

THE REVIEW announced: "A quest for methods of harnessing the inexhaustible energy of the sun in the form of useful power is about to begin in a broad program of chemical, physical, and electrical research at the Institute. This great undertaking, the potentialities of which stagger the imagination, is made possible by the foresight and generosity of Godfrey Lowell Cabot, '81, a life member of the M.I.T. Corporation, whose long interest in solar energy prompted him to offer Technology a capital gift of $647,700 for studies in this field.

"The income of Dr. Cabot's gift, which will be known as the Solar Energy Fund, is to be devoted specifically to a long-range search for direct methods of converting the sun's energy into power or storing such energy for future use. After 50 years the income of the fund may be used for such other purposes as the Corporation of the Institute may select. . . .

"The heat output of the sun in a year has been estimated by Charles G. Abbot, '94, Secretary of the Smithsonian Institution, to be equal to the burning of 400,000,000,000,000,000,000,000 tons of anthracite."

¶ Congratulations were being received by *Willis R. Whitney, '90,* named as the Marcellus Hartley Public Welfare Medalist of the National Academy of Sciences. . . . *Theodore B. Parker, '11,* appointed Chief Engineer of the Tennessee Valley Authority. . . . *Paul A. Heymans, '23,* chosen by the King of the Belgians to be Minister of Economics and Agriculture . . . and *Henry C. Gunning, '26,* recipient of the Barlow Memorial Prize of the Canadian Institute of Mining and Metallurgy.

50 Years Ago

AT ITS 26th Meeting, the Alumni Council received the final report of its committee which had been appointed to "consider the advisability of establishing a Course in 'Business Engineering.'" The Council voted unanimously to adopt the recommendations contained in the report, and to refer the document to the "Executive Committee of the Corporation with the request that it be given earnest consideration."

The committee's conclusion was "that there is a real demand and important field of usefulness for engineering graduates who have received, in addition to a fundamental training in science and engineering, instruction in business methods, business economics, and business law; and that the Council [should] express the further opinion that it is desirable that the Institute establish a new four-year Course offering such a combined training, in order that it may provide adequately for the education of a large group of students who, while desiring a systematic course of scientific training such as the Institute affords, have interests and aptitudes which fit them for positions on the business side of manufacturing and transportation enterprises. . . ."

75 Years Ago

PRESIDENT Francis A. Walker noted that the Class of 1888 was not only "the largest in our history, but in scholarship, in mental strength, and in manliness of character, it was a class of which the Alumni of the Institute may be proud to add to their rolls.*

"At the simple exercises of our graduation day, the Class of 1888 was most happy in hearing words of counsel and cheer from the eloquent lips of Dr. Phillips Brooks, once a member of the Institute Corporation."

¶ In his final advice of the year, the Editor of *The Tech* noticed "with strong satisfaction the process of broadening and liberalizing which has been going on here for the last few years in the affairs of the Institute. The gradual introduction of nonprofessional studies into the various Courses, the widening and deepening of the departments of literature, language, and history, the increased appreciation of the General Course, shown not only by the Faculty, but also by the students, are all signs that the day is near when the Institute will take its true place among the scientific and technical schools, and will cease to be looked upon as a place for learning a trade."

95 Years Ago

IN MAY, 13 members of the Institute's first class were graduated—one in mechanical engineering, five in civil and topographical engineering, six in geology and mining engineering, and one in science and literature.

100 Years Ago

AT THE 11th Meeting of the "Government," President William Barton Rogers announced that the Institute had been designated as a beneficiary under the so-called Morrill Act of the 37th Congress, making grants of public lands to the states to "provide Colleges for such branches of learning as are related to Agriculture and the Mechanic Arts."

¶ On May 27, at the 12th Meeting of the "Government," attention was called to the fact that since April the 600 shares of stock given by Dr. William J. Walker to the Institute to sell in order to complete the guaranty fund as stipulated in the Charter Act, had risen in value beyond the $100 per share which they were then estimated to be worth. Hence, as recorded in the Minutes:

". . . The Old Colony Rail Road Stock has materially advanced in price within a short time attributable to certain favorable business arrangements. . . . Owing not to this pecuniary rise in value, but to other reasons, Dr. Walker desires to retain the stock above referred to; he therefore offers . . . to take back the 600 shares, and to pay the Institute for the same the sum of $75,000."

The "Government" willingly accepted this offer, and "Voted, that a Committee of Five be chosen to act as a Building Committee with full powers to erect a building for the School of Industrial Science, after the Plans for said building had been accepted by the Government."

*With the addition of the Class of 1888, the Institute had a total of 584 graduates, all of whom save 30 were living.



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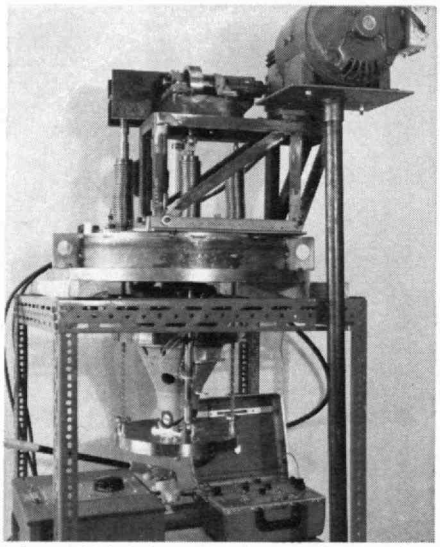
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Individuals Noteworthy

(*Continued from page 6*)

New Posts

NAMED in the news of promotions, elections, and appointments recently were:

Augustus B. Kinzel, '21, as a Member, Industrial Applications Advisory Committee, National Aeronautics and Space Administration . . . *Marion W. Boyer, '25,* as Executive Vice-president, Standard Oil Company of New Jersey . . . *James R. Killian, Jr., '26,* as a Director, Cabot Corporation;

Chester Peterson, '26, as Chief, Resistance and Reactance Section, National Bureau of Standards, U.S. Department of Commerce . . . *William Baumrucker, Jr., '29,* as a Director, Charles T. Main, Inc. . . . *James F. Biggane, '30,* as Manager of Manufacturing, The Maytag Company;

Charles E. Starr, Jr., '31, as a Director and Vice-president—General Administration, Esso Research and Engineering Company . . . *Robert B. Thompson, '32,* and *C. Stanford Olsen, '51,* respectively, as Director, Project Engineering, and as Manager, Government Projects Division, Dorr-Oliver Incorporated;

William A. Kilbourn, '33, John C. Proctor, '38, and *Philip Bragar, '48,* respectively, as Engineering Services Manager, Assistant Director of Administration, and Technical Services Director, The MITRE Corporation . . . *Warren L. Towle, '34,* as Manager, Physical Chemistry, Applied Research Group, Globe-Union Inc.;

Melvin W. First, '36, Dr. Stanley J. Adelstein, '48, and *Dr. William G. Austen, '51,* respectively, as Associate Professor of Applied Industrial Hygiene, School of Public Health; as Associate in Anatomy and Cook Fellow in Radiology, and as Associate in Surgery, Medical School—Harvard University;

Frank Kowalski, Jr., '37, as a Member, Subversive Activities Control Board . . . *Francis W. Sargent, '39,* as Director, Massachusetts Division of Fisheries and Game . . . *Howard O. McMahon, '41,* as a Director and Member, Executive Committee, Arthur D. Little, Inc.;

Leonard H. Schreiber, '49, George C. Sumner, '49, E. Leigh Secrest, '51, and *Alfred P. Madsen, '57,* respectively, as Manager of Flight Sciences, Manager of Support Equipment Design, Chief Scientist, and Chief of Aerospace Model Tests, General Dynamics, Fort Worth;

James W. Geiser, '50, as Director of Engineering, West Penn Power Company . . . *Allen L. Cudworth, '52,* as Director, Research and Development, Liberty Mutual Insurance Company, Hopkinton, Mass. . . . *John H. Austin, '53,* as Assistant Professor of Sanitary Engineering, University of Illinois;

Steven C. Mason, '57, as Product Specialist, Product Planning Department, Mead Corporation . . . *A. Norbert MacDonald, '58,* as Scientist, Research Department, Shawinigan Resins Corporation . . . *Bernard Shorr, '58,* as Assistant Director, Research Department, Travelers Insurance Co.

Psychology Professors

DEAN JOHN E. BURCHARD, '23, has announced the appointment of Richard M. Held as Professor of Experimental Psychology and N. Stuart Sutherland as Professor of Experimental and Comparative Psychology at M.I.T.

Dr. Held was born in New York in 1922, and educated at Columbia, Swarthmore, and Harvard. He was a research assistant at Swarthmore from 1946 to 1948, a teaching fellow at Harvard from 1950 to 1951, and a member of the Institute for Advanced Study at Princeton from 1955 to 1956. He joined the faculty of Brandeis in 1953 and became chairman of the Department of Psychology there in 1961. His research has been in perception, sensorimotor co-ordination, human development, and systematic psychology.

Dr. Sutherland was born in England in 1927, is a graduate of Magdalen College, Oxford, and received his doctorate there in 1957. He has been Oxford University lecturer in experimental psychology since 1958, and also has been lecturer at Oriel, Corpus Christi, and Merton Colleges, Oxford, since 1959. His research has been in vision in human beings, octopuses, rats, and goldfish; learning processes in animals; recognition and recall in human beings; and problems in the philosophy of the mind.

(*Continued on page 36*)



"To be continued"—at 45 Wall

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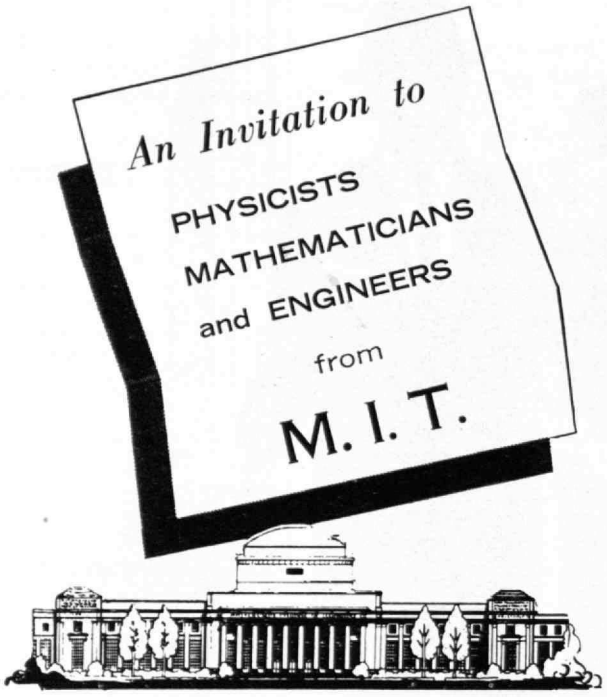
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Individuals Noteworthy

(Continued from page 34)

Oceanography Professors

WILLIAM S. VON ARX, '55, has been made professor of physical oceanography at M.I.T., and Henry M. Stommel, professor of oceanography. Both have been associated with the Woods Hole Oceanographic Institution for several years.

"Professor von Arx is interested primarily in the relationship between ocean and land, while Professor Stommel concerns himself primarily with the relationship of the oceans to the air," Dean George R. Harrison noted in announcing these appointments. "Their collaborative approach will greatly strengthen the integrated program of education and research in the Green Center for Earth Sciences."

Professor von Arx studied at Brown and Yale universities before receiving his doctorate at M.I.T. He became a visiting M.I.T. professor in 1956 and a part-time professor in 1957. Professor Stommel was graduated from Yale and was an instructor there before going to Woods Hole. He became a part-time professor at M.I.T. in 1959. Both men also have taught at Harvard.

Faculty Activities

DR. ALBERT O. SEELER, Professor and Medical Director, and *Kurt S. Lion,* Associate Professor of Applied Biophysics, were co-directors of a five-day postgraduate seminar at M.I.T. for specialists in internal medicine. . . . *M. Bryce Leggett,* '40, Associate Director of Admissions and Director of Advanced Placement, has been made executive officer of the Faculty Committee on Academic Performance. . . . *H. Guyford Stever* has been elected a director of Simplex Wire and Cable Co.

The Work of Alumni

ROBERT G. CHILTON, '48, was a member of the seven-man team awarded $4,200 by the National Aeronautics and Space Administration for the design of the Mercury-type spacecraft. . . . *Vincent G. Kling, '41,* was commissioned by the Greater Boston Stadium Authority to design a 60,000-seat stadium for Red Sox use and other events.

(Concluded on page 38)

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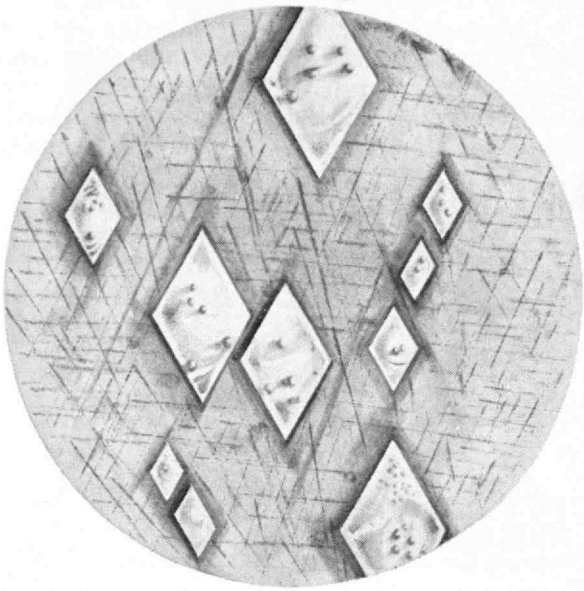


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Arthur C. Kenison, '19, Boston **Blaylock Atherton, '24, Nashua, N. H.** **John H. Schaefer, '25 Hackensack**

Herbert L. Neitlich, '49, Boston

The Challenge of the materials age



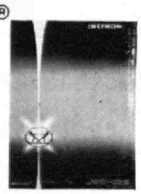
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Individuals Noteworthy

(Concluded from page 36)

In Executives' Program

MEN from 10 states and two foreign countries will complete the 10-week senior executive development program of the M.I.T. School of Industrial Management on May 10. They are:

Max H. Beasley, Singer-Cobble, Inc.; *Spencer H. Brewster, '43,* Plymouth Cordage Company; *Robert K. Buettner,* Diamond Alkali Company; *Charles H. Carpenter, Jr.,* M & T Chemicals, Inc.; *James M. Conners,* Grumman Aircraft Engineering Corporation; *Chester W. Couch,* Esso Standard Refining Company of India, Ltd.; *Robert C. Drummond,* Mobil Oil Company; *Paul W. Emler,* American Electric Power Service Corporation; *J. Carl Ferguson,* Kaiser Aluminum and Chemical Corporation; *George W. Fraser,* Singer Manufacturing Company, Ltd.; *W. George Gress,* Gillette Safety Razor Company; *Ralph C. Holmer,* Kennecott Copper Corporation; *John F. Horner,* American Oil Company;

Clair W. Leasure, Republic Steel Corporation; *Thomas B. McRann,* John Hancock Mutual Life Insurance Company; *James F. Mathis,* Humble Oil and Refining Company; *Wade C. Morris,* Southern Pacific Company; *Paul G. O'Friel,* Westinghouse Broadcasting Company, Inc.; *John W. Smith,* Mobil Petroleum Company, Inc.; *Donald W. Thomas,* Western Electric Company, Inc.; *Robert F. Tighe,* Kaiser Aluminum and Chemical Corporation; *Max P. Watson,* United Gas Corporation; and *Alexander M. Williams,* Campbell Soup Company.

Visiting Physicist

HEINRICH KAISER, an internationally known authority on spectrochemistry and applied spectroscopy, was a visiting lecturer at M.I.T. on February 28 and March 1, under the auspices of the American Association of Physics Teachers and the American Institute of Physics.

Professor Kaiser was formerly in the physics laboratory of Zeiss-Werkes in Jena. Since 1952 he has been director of the Institute for Spectro-Chemistry and Applied Spectroscopy at Dortmund, West Germany. He is also professor of physics at the University of Munster.

Where did yesterday go?

That's the big trouble with college reunions. They bring home the fact that time passes awfully fast!

Let's look ahead.

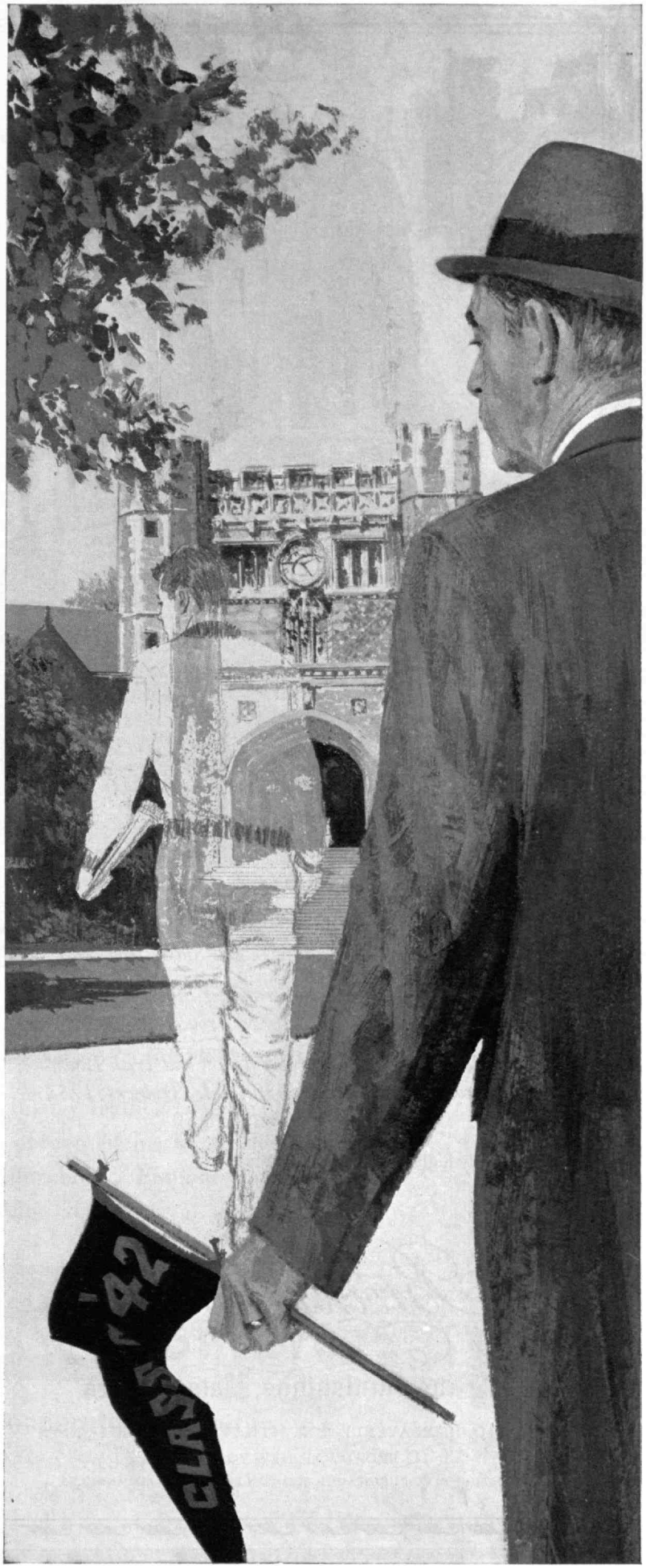
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Earth Science in Engineering

(*Concluded from page 28*)

liquid. The disastrous consequences of this liquefaction were demonstrated by the mud slide following the recent Chilean earthquake. Recent advances in the science of particulate systems and in laboratory equipment have made it possible for Professor R. V. Whitman, '49, to reproduce the liquefaction in the laboratory and to initiate research which may lead to a more thorough understanding of the phenomenon.

¶ The design of coastal structures and harbors as well as the protection of beaches against erosion requires detailed knowledge of the wave modulation and energy dissipation produced by coast lines and by man-made structures. Of particular interest in this area is a new type of breakwater which Professor A. T. Ippen is developing. It consists of an array of open tubes, arranged in several rows below the sea surface with the tube axes parallel to the direction of wave travel. Through creation of a jetting action, the breakwater acts to scatter up to 80 per cent of the wave energy into a higher frequency band of turbulence where it is rapidly dissipated into heat. Since the forces exerted on the device are small, it may be possible to suspend sections of breakwater from floating buoyancy elements. This would have the dual advantage of keeping the structure near the surface to be effective in energy dissipation and permitting its reorientation after installation.

¶ Another problem of great economic importance is the longshore transport of sand which exists at rates up to 500,000 cubic yards annually on many beaches. The author of this brief report is studying the mechanics of the process by which obliquely incident waves generate the sand-transporting currents.

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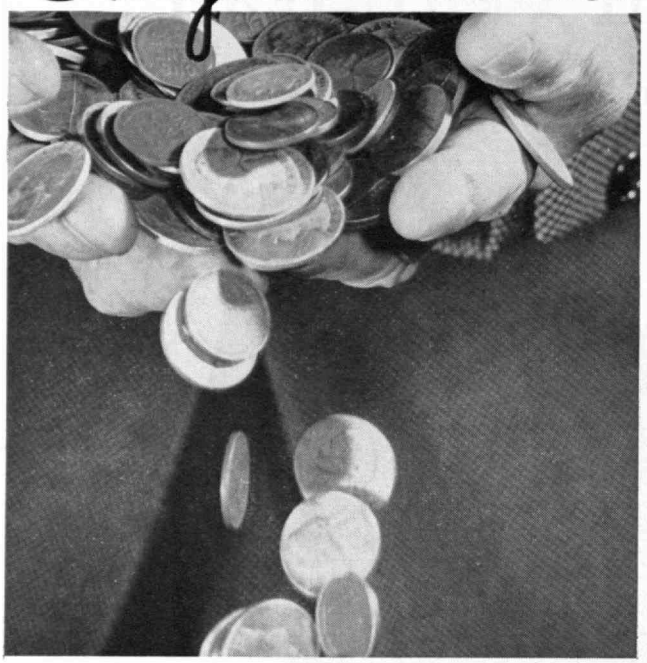
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Automation, Management, and the Future

(*Concluded from page 20*)

form of statistical reports and edited digests. These results are reviewed and sometimes accepted, especially when they support a decision that management favors.

The reluctance of executives to become personally involved with the computer may be understood partly in the same human terms as the reluctance of the steelworker to become supervisor of a machine in an automated factory. With both, education and time is the best medication. But a complete cure may not be possible for a generation or longer; that is, until today's students move into the new command.

Full responsibility should not be laid with the executive, however. Much of his reluctance is attributable to the state of the art in computers. Large computers, at present, are not simple tools to use, especially in a direct and personal way. If this situation were not to change markedly over the next decade, the hopes we have outlined for the future might remain mostly unrealized during our lifetimes.

We believe that the situation *will* improve, and we see signs of this already appearing. Several programming research teams are working hard on the development of user languages intended to make communication with the computer less like programming and more like discussion with a staff assistant. This work is as difficult as it is ambitious; in relative terms it must be considered still embryonic. Yet just the fact that there is wide agreement on the pressing need for better user languages is, in itself, of considerable significance.

A second favorable sign is the increased attention that is being given to means for making the large computer more readily accessible. Better user languages make the computer more accessible in the communications sense. But they do not bring the computer any closer to the user in the physical sense. What is required for this purpose is to multiply the number of points of access to the computer, from the traditional single console to dozens or even hundreds of consoles. These consoles must be in locations, generally remote from the computer, where they are in close proximity to the working places of respective users: locations like the executive office, conference room, factory, warehouse, regional distribution center, and retail store.

With its many users operating remotely and in parallel, the computer must be able to furnish them with essentially simultaneous access, not unlike the access provided by a central telephone exchange. That is, the computer must be able to switch rapidly among the various consoles in sequence, giving each one a small portion of its time. This procedure is sometimes referred to as *time sharing* the computer. Since the computer's operating speed is many orders of magnitude faster than that of the human at the console, each user under time-shared control may experience the supreme feeling of having it at his command.

These desiderata are almost entirely within the reach of current technology. In fact, they are already incorporated to some degree in several large information-processing systems now in operation. Among the more prominent examples are Westinghouse's Tele-Computer Center, American Airlines' Sabre reservation system, and A.T.&T.'s Electronic Central Office.

Further development of the multi-console, time-sharing approach requires experimentation on a broad scale with currently evolving systems. This is the best way to face the issues of economics and feasibility that are all-important. In addition, elaborate executive programs must be perfected to handle the switching, storage allocation, memory protection, console control, and other functions central in the operation of the time-sharing system. This work is in progress at several places, M.I.T. among them.

M.I.T. has been time sharing three typewriter consoles on its IBM 7090 computer, and is in the process of expanding the time-shared mode of operation. It is also launching a major research and development program which will consider ways, such as time sharing, for making the computer more accessible and more generally useful than it has been in conventional modes of operation.

In a sense, time sharing runs opposite to a different movement toward smaller, decentralized computers. There are points to be made for both directions, and advocacy of one does not necessarily require rejection of the other. The really conclusive arguments must await future developments. Nevertheless many of us feel strongly that the greater flexibility, speed, memory size, operating economy, and co-operative effort made possible by large, centralized systems tip the balance in favor of time sharing.

The possibilities tempt the imagination. They run the gamut from company and government information centers, medical diagnostic and research facilities, automatic libraries and legal files, to programmed educational institutions, management simulation laboratories, and man-machine decision parlors.

Time-sharing computer systems will not be restricted to wealthy corporations. Small companies also will be able to enjoy the benefits of time sharing by subscribing to the service of a local computing facility or to a large computing utility. Organized as a utility, a computing service could include access, at a charge, to a vast array of computer programs, information libraries, and automated consulting services, such as business forecasting and analysis. As has been prophesied, the computing utility could become the basis for a new and important industry.

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Edited by WILLIAM PAUL, Harvard University; and DOUGLAS WARSCHAUER, Raytheon Company. McGraw-Hill Series in Materials Science and Engineering. 496 pages, $15.00.

Provides a review of past work in the field of solids under pressure coupled with informed speculation on the best directions in which to employ the techniques now available. It is composed of a series of fairly long articles by the most prominent men in the field. Each article reviews a particular phase of investigation centered around the author's own specialty; referring only briefly to techniques, and not necessarily reporting the latest data.

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ANALYSIS OF LINEAR TIME-INVARIANT SYSTEMS

By WILLIAM M. BROWN, University of Michigan. McGraw-Hill Electrical and Electronic Engineering Series. Available in May, 1963.

A senior-graduate text which develops in considerable depth operational analysis and its applications to the study of linear time invariant systems. Though fundamentals are stressed, the book is slanted toward system evaluation and optimization rather than toward detailed design work. The object of Part I is to provide a deep understanding of the theory of two-sided Laplace transforms. The object of Part II is to cover a number of rather modern topics. The theory in Part II provides a basis for analyzing numerous electronic systems.

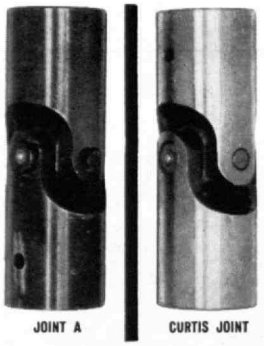
SPACE COMMUNICATIONS

Edited by A. V. BALAKRISHNAN, University of California, Los Angeles. University of California Engineering and Science Extension Series. Available in August, 1963.

This book is written for communications engineers who desire to extend their understanding of the challenging problems of space communications. The emphasis is on the physical and engineering considerations that are peculiar to space communications. Includes: data processing, noise sources, relevant communication theory, components, subsystems and complete systems for space probes and orbiting satellites for communications and meteorology.

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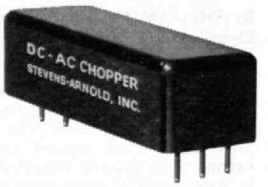
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Science and Public Policy

(*Concluded from page 16*)

cluding one for an institute of science and technology to supplement, and reinforce, at the graduate level, the already existing universities in the separate Western European countries.

International and interregional collaboration can play a major role in technical assistance as well as in research and education, bringing about more rapid development of nations that naturally group together though no one of them quite has the resources to do what might be done. The various branch organizations of the United Nations are important instruments for carrying through such mutual-assistance programs. For example, in co-operation with the Economic Commission for Far East and Asia, UNESCO is helping establish teacher-training centers in India, Thailand, and the Philippines. A similar training center for the Arab States is operating in Beirut, Lebanon. For over 10 years UNESCO has been supporting scientific research in the arid-zone areas of the world with the ultimate aim of better living conditions for the inhabitants of these vast and difficult areas.

These observations may seem to be applicable only in large, well-developed nations. But the smaller and less-developed nations should take encouragement from the fact that even our experience with the integration of science and public policy is in many ways still embryonic, and that we, too, are still adapting and trying new organizational arrangements. They should remember that our systems—and indeed, our countries—have all evolved from much simpler beginnings. The important thing is that a beginning be made, however simple or primitive it may need to be.

Government's Role Studied

"THE FEDERAL GOVERNMENT—How Much?" was the topic chosen for a four-day intercollegiate conference in April which brought more than 100 undergraduates to M.I.T. from other schools and universities throughout the United States. Speakers at this conference considered the federal government's role in economic growth and stability; in scientific research, development, and planning; and in labor-management relations.

"International or college problems are often subjects for university debate, but national topics are rarely discussed extensively by student groups," said Stephen P. Kaufman, '63, who was this meeting's chairman. "The questions discussed at the M.I.T. conference are some of the most important facing us today, and their prominence will continue for many years."

Professor Max F. Millikan of the M.I.T. Center for International Studies was chairman of the Faculty advisory committee, and the roster of speakers included members of M.I.T.'s and other schools' faculties.

WTBS Joins Network

THE FM RADIO STATION run by M.I.T. students has joined a network of college radio stations known as UBS (University Broadcasting System). It links the Harvard, Brandeis, Boston University, and M.I.T. student radio stations by telephone lines, and is believed to be the country's only college network of its kind.



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FOR INSTANCE: Phil recently was consulted by a Midwest corporation concerning an unusual marine-construction project in the Boston area. Drawing on his experience, he called to their attention a parallel and precedent which will be helpful in determining the feasibility of the idea. He is also helping to provide other local information needed to advance plans for the construction and financing of the project. If you'd like a man at the top as your firm's financial pilot, make Phil Stocker your company banker. He's at RIchmond 2-4000 now.



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Talk of Our Times

Opportunities for Engineers

JAMES T. DUANE, *'53, manager of General Electric's space power engineering effort, spoke in part as follows when selected by Eta Kappa Nu as "the outstanding young electrical engineer of the year":*

OPPORTUNITIES for technical accomplishment in electrical engineering are readily apparent. There is so much that needs to be done, so much that might be done, yet in comparison so little that acually gets done. Fascinating and exciting opportunities are plentiful, but it's hard to keep them in sight through the routine of day to day activities. It's temptingly easy to go along answering questions instead of identifying basic problems, using references as a substitute for imagination, relying on empiricism when insight is needed. This may be the easy way out, but the engineer should demand more of himself. His real opportunities lie not in designs and hardware, but in bigger and bolder ideas.

Engineers are almost totally dependent on concepts and techniques developed by their predecessors. The growth and development of this fund of knowledge is every engineer's responsibility, but it is also his greatest area of opportunity for personal and professional accomplishment. The opportunities are truly unlimited—it's only necessary to accept and act on them. Repetitive solution of problems already solved by others should not be enough to satisfy anyone. Only in a constant striving to develop and communicate new knowledge does the engineer truly serve himself and his profession. From such service come the deep and lasting satisfactions of an engineer's career.

Opportunities create problems also. The tremendous strides being made today in new materials, new devices, and new analytical tools result in the continual growth of fresh and fertile fields for engineering accomplishment. Since they are unexplored by others, these fields entice the engineer with novel opportunities for achievement. This is a wonderful stimulus for advance, but it does represent a risk that the appeal of the unexplored will attract and retain a disproportionate share of the available talent and effort—this at the expense of more mature fields of endeavor where many major problems remain unsolved.

This situation is exemplified in electrical engineering by the ill repute into which the words like "power" have fallen in recent years. Schools adopt synonyms and substitutes for the established terminology of a few years back. Students and graduates seem to feel that their opportunities lie only in the unique and the exotic. This sort of bias extends beyond the recent graduate. About a year ago I was asked to present a paper at the AIEE meeting. The specified subject was generators, in particular those types of turbine-generators useful for space vehicle applications. Surely the unique problems in such machinery represent an exciting challenge to any electrical engineer. But, the request was quite specific, the paper's title mustn't mention "generators"—that would make the meeting program sound old-fashioned. What they wanted was a paper not on generators, but on "Dynamic Converters."

Electrical engineering gains little through this sort of collective self-deception. Balanced effort on all fronts is vital to continued progress. Older fields, such as those dealing with power, are not only economically important, but they are also fascinating and challenging areas of opportunity for the engineer. There is a real need for increased understanding and appreciation of this among young engineers. They should be made aware of the tremendous thrills and satisfactions awaiting those who are willing to master the rich heritage of prior art, and by standing on the shoulders of those who preceded them reach forward to new conquests.

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Basic Research Grants

THE ALFRED P. SLOAN Foundation has made two-year unrestricted grants to Glenn A. Berchtold and James L. Kinsey, Assistant Professors of Chemistry at M.I.T., and a second grant to Bertram Kostant, Professor of Mathematics, for basic research.

Dr. Berchtold plans to study the application of enamine chemistry to organic synthesis and investigate the synthesis of a group of organic compounds known as hetero-substituted 1,3-cyclohexadienes. Dr. Kinsey will study chemical reactions in crossed molecular beams. Dr. Kostant expects to continue work on applications of Lie theory to differential and algebraic geometry which he began under a similar grant in 1961.

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WALTER W. MAUER

With seven years experience in sales and service in tangible goods, he became a member of our Harrisburg Agency in June, 1961. During his first 12 months he sold 39 cases for $916,384. In March, 1962 he was selected as the Company's first year Man of the Month.



PATRICK J. ROACH

A graduate of Marquette University, and a practicing attorney for six years, he joined our Milwaukee Agency in April, 1961, and in his first 12 months he sold 39 cases for $747,400. In each of the last 15 consecutive months he sold over $30,000 and in May of 1962 was chosen first year Man of the Month.



RONALD DAVIS BALSER

Graduated from the Wharton School of the University of Pennsylvania in 1960, he joined our Atlanta Agency in April, 1961. His 1962 ordinary sales amounted to 80.5 policies for $1,533,996. In each of the last 13 months his production exceeded $30,000.



GORDON E. GALLOWAY

A graduate of the University of Miami, he served three years with the USAF. After nine years of business experience first as a Tax Assessor, and later as a store manager he joined our Miami-Pierce Agency in March, 1961. His 1962 sales totaled 52 cases for $627,250.

Some of the Eastern Group Alumni in the Massachusetts Mutual Service:

M. I. T.

Lyman L. Tremaine, C.L.U., '23, New York
Harold G. Ingraham, Jr., C.L.U., '49, Home Office

Lehigh

Russell E. Hoaster, C.L.U., '31, San Antonio
Edward Billstein, Jr., '40, Atlanta
R. Lester Dodson, Jr., '44, New York

Lafayette

David B. Adler, C.L.U., '17, Orlando
Frederic F. Lawall, '22, New York
David K. Aldrich, C.L.U., '38, Allentown
Frank W. Hiller, '43, Home Office
Richard A. Faust, '56, Binghamton
Aman M. Barber, Jr., '59, Allentown
Cameron D. Warner, '61, Bethlehem

New Books

PERT: A New Management Planning and Control Technique, by Gabriel N. Stilian, '50, and others *(American Management Association, $6), is reviewed here by Donald Carroll, '58, Assistant Professor of Industrial Management.*

EARLY LAST summer, the Department of Defense and the National Aeronautics and Space Administration issued joint memoranda to contractors "endorsing" their use of PERT (Program Evaluation and Review Technique) and its job costing extension. By the stroke of a pen, as it were, a substantial portion of American industry has or will become involved in this device rooted in network theory, like it or not.

It is thus with commendable timing that Mr. Stilian and several colleagues have issued this little (192 pages) book avowedly ". . . for the line manager—the nonspecialist who wants to know what PERT is, how it works, and to what extent it can help him plan and control his own particular job . . ." It is appropriate to note that the contributors suggest that PERT has found its major use in the planning and control of projects in the pre-production-in-volume stages. One suspects that the book will also interest the specialist who doesn't mind an occasional brickbat among the bouquets and who wants to know what managers think of the technique.

As this suggests, the authors approach the subject with refreshing candor at times, e.g., "The potency of PERT as a device for pointless administrative snooping is unparalleled . . ." Since these men are drawn mostly from companies which have used PERT extensively, their cautions and doctrine are based on wisdom distilled from considerable experience. The level of presentation is highly pragmatic and one notes with approval the relative absence of evangelical fervor which often mars discussion of management techniques.

The book is divided into four major subject areas with introduction, epilogue, bibliography (99 references), and index. The first subject, "PERT and the Manager," contains articles placing PERT in the perspective of management tools and the nature of its contribution. The second section, "PERT Theory," contains relatively complete introductions to the techniques including PERT/Cost. Readers who are unfamiliar with the rudiments might start with the lucid exposition by Kenneth Tebo, '47, in this section. The third section, "Practical Experience with PERT," contains relatively complete descriptions of applications in two large companies (I.B.M. and G.E.) accompanied by do's and don't's and an article on the machine computational ramifications of PERT and its extensions to include cost, manpower, and other performance dimensions. The last section discusses "Allied Techniques," namely, "Critical Path Method" and "Line of Balance." Those with a predilection for management

(*Concluded on page 51*)

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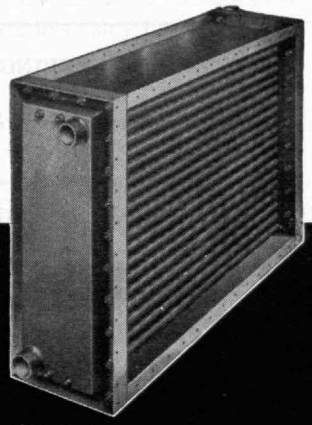
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New Books

(*Concluded from page 48*)

science should be interested in the time-cost optimization scheme included in the former.

As is to be expected in a collection with many contributors there is substantial duplication of material among the papers, and some topics are treated rather lightly, notably the problem of the "appropriate" level of detail for the level of management concerned. Many will agree with Mr. Stilian that PERT applications should be carefully evaluated by normal economic criteria, yet little cost and value information is given.

In summary, this book should prove valuable both to managers who are already involved with PERT and who are interested in the collected wisdom of other users and to the neophyte assessing its capabilities.

Have You Heard of These Books?

RECENT PUBLICATIONS likely to interest M.I.T. Alumni have included:

Advanced Inorganic Chemistry—A Comprehensive Course, by Professor F. Albert Cotton of M.I.T. and G. Wilkinson of London (John Wiley & Sons, Inc., $14.50).

IR—Theory and Practice of Infrared Spectroscopy, by Herman A. Szymanski and Nelson L. Alpert, '48, to be published in June (Plenum Press, $10).

Magnetohydrodynamic Shock Waves, by J. Edward Anderson, '62, 16th of the Press Research Monographs (M.I.T. Press, $6.50).

Men of Space, by Shirley Thomas, Volume 5, including biographical chapters about Charles H. Townes, M.I.T. Provost; Robert C. Seamans, Jr., '42, and others (Chilton Company, $4.95).

Music, Acoustics, and Architecture, by Leo L. Beranek, Lecturer at M.I.T., with a foreword by Eugene Ormandy (John Wiley & Sons, Inc., $17.50).

Progress in Inorganic Chemistry, Volume IV, edited by Professor F. Albert Cotton of M.I.T. (John Wiley & Sons, Inc., $15).

The Sea: Ideas and Observations, Volume 1, edited by M. N. Hill, Cambridge University; C. O'D. Iselin, Professor of Oceanography at M.I.T.: and E. D. Goldberg and W. J. Munk, Scripps Institution of Oceanography (John Wiley & Sons, Inc., $25).

Waves in Anisotropic Plasmas, by William P. Allis, '23, Solomon J. Buchsbaum, '57, and Abraham Bers, '55 (The M.I.T. Press, $7.50).

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Club News

Future M.I.T. Club Meetings

Following are the dates and principal speakers as announced at the time of printing for M.I.T. Club meetings during May and June, 1963. For more details consult the club secretary in your city.

May 8—Hartford—Professor Nathaniel H. Frank, '23
Secretary: William A. Bayer, '58, 422 Farmington Avenue

May 9—Boston and Route 128 Clubs—Panel on Ethics in Business, Dinner meeting with ladies
Secretary: Warren W. Heimbach, '58, 120 Sylvan Street, Danvers

May 15—Buffalo—Dr. Nevin S. Scrimshaw
Secretary: Clifford L. Muzzey, '41, Cornell Aeronautical Lab

May 17—Long Island—Kurt Stehling, NASA
Secretary: Jimmie Chin, '56, 67-15 152nd Street, Flushing 67

May 23—Detroit—Brewery Tour
Secretary: Mrs. Ella P. Gardner, '55, 1821 Villa, Birmingham

June 10—Alumni Day at M.I.T. Reservations: Room 1-280, M.I.T.

Rochester Alumni Hear President Stratton

A reception and dinner at the Oak Hill Country Club, Rochester, N.Y., on March 13, honored President Julius A. Stratton, '23. One hundred fifty M.I.T. Club of Rochester members and their wives turned out on a snowy evening for cocktails and an excellent dinner. William A. Pitbladdo, '31, was chairman, assisted by Gordon L. Calderwood, '27, E. Philip Kron, '34, and Charles F. Payne, '33. President Stratton was introduced by Clarence L. A. Wynd, '27, who in turn was introduced by H. Sheldon Smith, '31, Club President.

Dr. Stratton went back through the years tracing various periods of M.I.T.'s development. He stated that the Second Century Fund had provided the resources for a new era in the history of M.I.T. These resources are necessary, he said, but the real impact of a new era must be in the energy and attitude of those making up the Institute body. Dr. Stratton suggested that it might be time to consolidate and redefine aims—such as the need for quality, balance, and attention to environment and climate. He stated that M.I.T. still serves best as an institute of higher education and that this is its primary purpose.

President Stratton reviewed the place of the undergraduate in the future scheme of M.I.T. and stated that he will continue to be of paramount importance. Many of the undergraduate's problems were described, including those of preparation, admission, variety of interests, and psychological attitude. One of the most pressing areas is finding ways to make the undergraduate feel a part of the community. Dr. Stratton also discussed what and how to teach the undergraduate. He referred to the work being done by the Committee on Core Curriculum in trying to find the best method to satisfy the requirement of educating all facets of the student. The sometimes conflicting and always competing requirements of training each individual to be a responsible citizen, teaching the true meaning of engineering, giving him the flavor of the profession, establishing basic feeling for design—and doing all this with a pace and flexibility which maintain student interest—is a tremendous challenge. Limitations of available time and the question of free development versus prescribed courses further complicate the situation.

President Stratton did not offer any magic cure-alls. However, he did make us conscious of the tremendous efforts under way at M.I.T. to define and solve the problems. His speech increased our confidence that the dedicated educators and scientists will find answers leading to a bright new page in the intellectual history of M.I.T.—John D. O'Brien, '51, Secretary, 50 Pelham Road, Rochester 10.

New Haven Club Topic Is Tropical Africa

The New Haven County M.I.T. Club met for dinner on March 26 at the Waverly Inn in Cheshire, Conn., and heard a stimulating talk by J. Daniel Nyhart, Assistant Professor of Industrial Management, on the "Changing Face of Tropical Africa." Professor Nyhart explained some of the difficulties which the new African governments are encountering. We enjoyed hearing of the opportunities that fellows in the M.I.T. Africa Program are having in helping some of these governments. Donald P. Severence, '38, Executive Vice-president of the Alumni Association, also spoke on ways in which Alumni can be helpful to M.I.T.—J. A. Clumper, '55, Secretary, Francis Drive, Bethany 15, Conn.

Detroit Alumni Study Recent Auto Designs

Over 60 members and guests of the M.I.T. Club of Detroit met on March 7 at the Chevrolet Engineering Center of General Motors in Warren, Mich. Zora Arkus-Duntov, Director of High Performance Vehicle Design and Development, told about the development of the super-Corvette, CERV I (Chevrolet Engineering Research Vehicle), and the Corvette Stingray. In addition to being an engineer, Mr. Duntov has raced—a class winner at Le Mans in 1954 and 1955, a stock car record at Pike's Peak in 1956 with a production Chevrolet, and a Sportscar Flying Mile record in a 1956 Corvette at Daytona Beach. He showed interesting movies of races and exhibited various models in the evolution of Corvette. Before the meeting, cocktails and dinner were enjoyed at the Executive Inn.

The club met in January at McGregor Community Conference Center of Wayne State University. Dr. Alan Canty, Director of the Psychiatric Clinic of Recorders Court of the City of Detroit, spoke on "The Criminal Mind." The clinic, he explained, examines all persons convicted of murder in the county, other felons referred by the court, and habitual traffic law violators. He described some of the common neuroses and psychoses affecting these people.

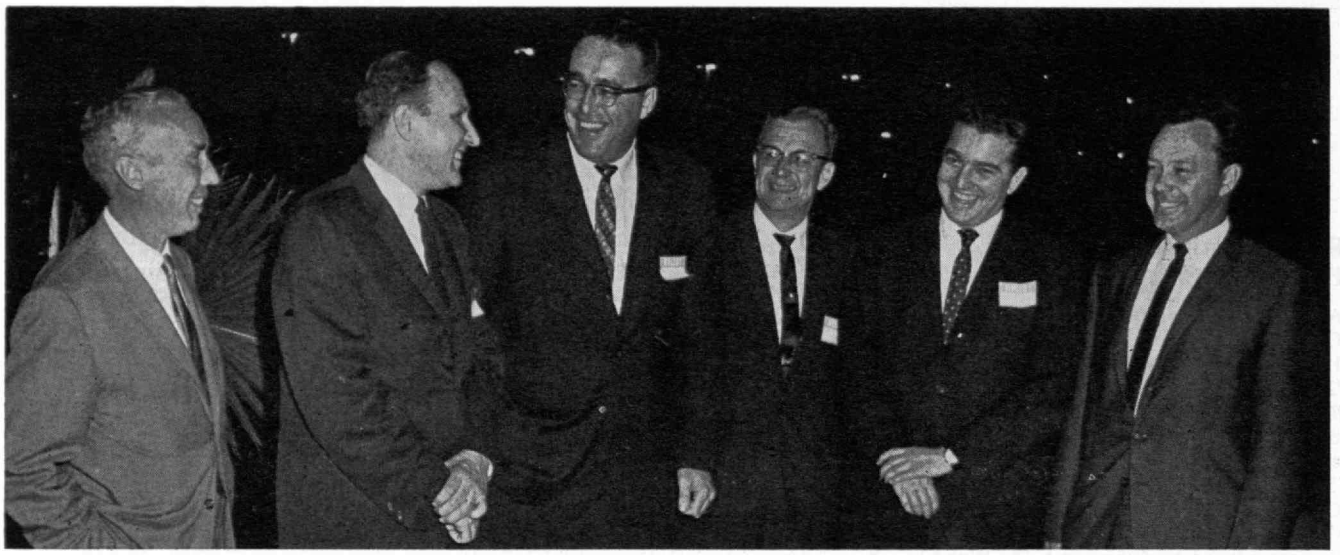
The annual business meeting and election of officers will be on May 23. A tour of Stroh's Brewery has been arranged.—Ella Paton Gardner, (Mrs. Richard R. Gardner), '55, 1821 Villa, Birmingham, Mich.

Great Britain Club Hears Professor Heidt

Members of the M.I.T. Club of Great Britain and their ladies met on February 21 at the Goring Hotel in London to entertain Lawrence J. Heidt, Professor of Chemistry, and Mrs. Heidt, who were on their way home from Japan. Presiding were: David N. Truscott, '35, President; and Arthur S. D. Barrett, '39, Secretary-Treasurer.

Professor Heidt first gave an account of the changing face of M.I.T.'s schools and buildings—both keeping ahead in national and international developments. He then referred to his work at the University of Tokyo and the extraordinary advances being made there in fundamental science by Japanese research workers. Professor Heidt described his meeting with the M.I.T. Club of France in Paris, at which he was prevented from speaking for very pleasant and entertaining reasons—by the long reminiscencing of that grand old man Bosworth, '89, the original architect of M.I.T No such interruption, however, was made by our club, to a most fascinating and learned discussion from Professor Heidt.

The Great Britain Club is always glad to know of Alumni visiting London, and it is hoped that they will advise the Secretary through the Alumni Association, when it might very well be that their visit will coincide with one of our meetings and thus help us to keep in touch.—Theodore V. S. Durrant, '35, Past President, 207 King's Cross Road, London, W.C. 1; Arthur S. D. Barrett, '39, Secretary-Treasurer, The Coach House, Park Hill Road, Shortlands, Kent, England.



M.I.T. men gathered at the Town & Country Hotel, San Diego, Calif., last February to form the new M.I.T. Club of San Diego—recognized as the Alumni Association's 96th branch. Among the 33 Alumni attending were (from left): George B. Webb, '36; Donald P. Severance, '38, Executive Vice-president of the Alumni Association; William F. Helmich, '50, Club President; George C. Hatch, '35; Richard I. Singer, '53, Secretary-Treasurer; and Robert H. Fowble, '52.

Boston Alumni Discuss Starting Small Businesses

A turning point in many men's lives is the decision to start their own business. The Greater Boston economy has benefited substantially from the creation of new companies. At a March 14 luncheon meeting of the M.I.T. Club of Boston at the Union Oyster House, three men who have started companies recently were scheduled to explain their problems, successes, philosophy, and experiences. Panel members were: Marvin Schorr, President of Technical Operations, Inc.; Nicholas DeWolf, '48, President of Teradyne, Inc.; and Professor Arnold Amstutz, '58, of Scientific Development Corporation; and moderator, George Macomber, '48, President of G. B. H. Macomber Company.

General James McCormack, '37, was to speak at an April 11 luncheon, at which time the Club was to elect officers and executive committee members for next year. Reserve May 9 with your wife for our spring dinner meeting at the newly opened Charterhouse Hotel on Memorial Drive.

The career counseling program is under way. In response to interest expressed by the younger Alumni, a general discussion of career and evaluation was to be held at the M.I.T. Faculty Club on March 14.—Warren W. Heimbach, '58, Secretary, 120 Sylvan Street, Danvers, Mass.

Washington Club's Topic Is Drug Investigation

Ninety-two Alumni and guests of the M.I.T. Club of Washington met on February 26 at the Cosmos Club to hear Dr. Frances O. Kelsey of the U.S. Food and Drug Administration speak on "The Investigation of New Drugs." Dr. Kelsey holds the Distinguished Federal Civilian Service Medal for her key role in the refusal to approve the American marketing of thalidomide. She was introduced by Paul M. Robinson, Jr., 2-'44, event chairman. Dr. Kelsey reviewed the history of drug legislation and control in the United States and described the FDA's methods of insuring the safety and efficacy of new drugs.

Prior to coming to Washington in 1960, Dr. Kelsey was a general practitioner in South Dakota for three years, but she is essentially a research worker and has contributed since 1936 a steady stream of research articles in pharmacology and physiology. Prominent among these articles are many on anti-malarial drugs. It was research in this field that impressed upon her the drastically different effects which drugs can have and the need to check carefully for the separate effects of any drug.

The annual meeting to be held April 25 will be devoted to city planning and urban renewal.—Paul M. Robinson, Jr., 2-'44, Secretary, 8009 Jansen Drive, Springfield, Va.

Northern New Jersey Club To Hear NASA Space Expert

The M.I.T. Club of Northern New Jersey was scheduled to hear Albert J. Kelly, '48, an active duty USN Commander assigned to the National Aeronautics and Space Administration, explain "The Exploration of Space," at a spring meeting. A Bostonian, Dr. Kelley received his Sc.D. from M.I.T. in 1956, majoring in aeronautical guidance and control. After graduation from the Naval Academy, he saw World War II cruiser duty and Korean duty as a carrier squadron pilot and test pilot.

The Club also heard Rudolph J. Ozol, '36, discuss "Investments and Retirement Planning" at a recent meeting. Mr. Ozol is the owner of investment offices in Linden and Westfield, N.J.

The Northern New Jersey Club plans to honor one of its members at a meeting on May 9 for service to the club and its alumni program. A committee is hard at work selecting the nominee and an appropriate award. It is hoped this innovation will be adopted by other Alumni clubs.

The nomination committee appointed in February is assembling a slate of officers for the 1963-1964 club year.—Carlo N. De Gennaro, '53, Secretary, 905 Hudson Street, Hoboken, N.J.

Route 128 Group To Hear Panel on Business Ethics

The nation's space programs have received intense attention in the Boston area since NASA's announcement of plans for a space center here. The story of M.I.T.'s newly established center for Space Research was to be told to the Route 128 Club by C. Stark Draper, Head of the Department of Aeronautics and Astronautics, on March 28 at the Lexington Inn.

The May 9 joint dinner meeting with the Boston Club will feature a distinguished panel on the topic "Ethics in Business." Ladies and guests are invited. —Jay Zeamer, Jr., '40, President, Old Ayer Road, Groton; Rodman F. Flinchbaugh, '42, Secretary, 17 MacArthur Road, Natick, Mass.

Connecticut Valley Alumni Learn About Mystic Seaport

Members and guests of the M.I.T. Club of the Connecticut Valley attended a dinner meeting at the Log Cabin in Holyoke, Mass., on March 5. The guest speaker was Charles A. Brooks, General Manager of the famous Mystic Seaport. Mr. Brooks, augmenting his talk with colored slides of the Seaport, told about the origins, growth and future of this popular historic site.

Alumni interested in the spring meeting, to be held in May, should contact the club secretary.—Lloyd Gilson, '55, Secretary, 132 Chalmers St., Springfield, Mass.

Class News

'92

I am sorry to have to report the death of another classmate, **Harry C. Parkes,** who died last June at his home, 4309 Greenview Avenue, Chicago, Ill. I regret that I have no record of his career.—**Charles E. Fuller,** Secretary, P. O. Box 144, Wellesley 81, Mass.

'95

Just to jog your memory, we mention in this May issue that '95's annual meeting will be held in June after the Alumni Day luncheon under the big tents set up in the Great Court on June 10. We hope you can be with us.—**Andrew D. Fuller,** Secretary, 120 Tremont Street, Boston, Mass.

'96

Come to the class meeting at the luncheon on Alumni Day in June and see the building expansion on both sides of Massachusetts Avenue and learn of the expansion of the humanities in all the courses. Cross the river and get a preview of devastation at Copley Square and along the Boston and Albany Railroad of what bombing may cause; over in Brookline, science, tax revenue and finance have replaced the humanities, bare brick walls and glass where old public structures were and visible destruction is on the way to the old Tech Field. Excuses for absence may be sent to the secretary and any account of student incidents concerning **Will Coolidge** or yourself will be appreciated.—**James M. Driscoll,** Secretary, 129 Walnut Street, Brookline, Mass.; **Henry R. Hedge,** Assistant Secretary, 105 Rockwood Street, Brookline, Mass.

'97

Some weeks ago, Charlotte Daniell sent a very complete outline of Jere's career, which I quote below, and commented on his love of outdoor life and interest in civic affairs. **"Jere Rogers Daniell,** 87 years old, a member of one of Franklin's most prominent families, and in his own right a leading naval architect and engineer, passed away at his Lake Shore Drive home early Wednesday morning, December 26, 1962. He had been in ill health for some time. He was the son of the Honorable Warren Fisher Daniell, a leading paper manufacturer in the state, and a former United States Congressman. His mother was the former Abby Ann Sanger. Mr. Daniell was born June 21, 1875, in the Daniell Mansion, torn down just recently after seeing years of service as the Daniell Junior High School; the mansion had been left to the city by Mr. Daniell's father.

"He was educated at Powder Point School, Duxbury, Mass., Dr. Hales School Beacon Hill, Boston, and was graduated from the Massachusetts Institute of Technology with the Class of 1897. In 1914 Jere established a scholarship for Franklin boys at M.I.T. in the memory of his father. . . . Mr. Daniell served in the Spanish-American War in 1898 as an ensign in the U.S. Navy. Following the war he attended the University of Geneva in Switzerland. In the summer of 1900 Jere and a classmate, Paul Delano, ('00) went abroad touring Scotland and England on their bicycles. That fall he joined the yachting firm of Bouden Crowninshield of Boston, and later New York Ship Building Company, before being called to the Electric Boat Company, Groton, Conn., in 1912. Two years later he was sent to Spain to supervise the construction of 12 submarines which were built at Cartagena, Spain, by the Sociedad Espanola de Construction Naval. Mr. Daniell left Spain a short time before the political revolt which brought about the abdication of King Alphonso, which was apparent during the latter part of the time Mr. Daniell was in the country. Between 1914 and 1931 he traveled extensively in Europe, and returned to New London and retired.

"In 1940 he was called to the Massachusetts Institute of Technology to instruct special courses in naval architecture. He was made a professor and stayed at M.I.T. until 1947 when he retired. . . . Mr. Daniell was a member of the Unitarian Church. He belonged to the M.I.T. Club of New Hampshire, Society of Naval Architects and Marine Engineers, Society of Naval Engineers, the Army-Navy Club in Washington, D.C., the Appalachian Mountain Club, and while in Spain, he was a charter member of the Madrid Rotary Club. . . . His first wife, the former Anna Harding Lippincott of Woodbury, N.J., passed away in 1930. . . . Mr. Daniell is survived by his wife, the former Charlotte Frothingham Brown of Groton, Conn."

Thus far, there have been no responses to my appeal for a volunteer for secretary-treasurer of the class. . . . Miss McCormack of the Alumni Association, reports that we have $316.59 in the class treasury, and that the "Lamb Fund" has sufficient in it to dispense at the present rate for a year or two more. . . . Who is planning to be at the June Alumni Day? —**George R. Wadleigh,** Acting Secretary, 70 Flower Ave., Hastings-on-Hudson, N.Y.

'98

On January 24, we received a note from the secretary of the University Club of Chicago to the effect, that "we sincerely regret to advise you that Mr. **Daniel W. Edgerly,** M.I.T., '98, died this morning of a heart attack in Presbyterian St. Luke's Hospital." Shortly thereafter, this sad news was confirmed by a letter from William I. Groth, Assistant-Secretary of the Northern Trust Company of Chicago 90, Ill., to the effect that, "Some correspondence from you to Mr. Daniel W. Edgerly indicates that you are class secretary for the M.I.T. Class of 1898. I thought you might wish to be advised that Mr. Edgerly passed away on January 23, 1963, in Presbyterian-St. Luke's Hospital in Chicago, Ill." We have since received two letters from Mr. Groth, giving further details concerning the life and accomplishments of Daniel W. Edgerly, under the heading "Estate of Daniel W. Edgerly": "Mr. Edgerly was born October 21, 1875, in Farmington, N.H. He was the child of Daniel W. Edgerly and Ellen A. Hanson Edgerly. Mr. Edgerly was a retired vice-president of Titanium Pigment Corporation."

More recently on March 6, 1963, Mr. Groth further advised us: "According to the National Lead Company, he was widely known throughout the paint industry, which he served for close to half a century; and he was largely responsible for the early introduction of titanium pigments to the industry. When he joined the pigment sales department of the company's St. Louis Smelting and Refining Division in 1917 he had already acquired 17 years of valuable experience as a chemist and superintendent in the laboratories of paint manufacturers. In 1923, he was transferred to the Titanium Pigment Corporation, a company subsidiary, and was given the responsibility of

Sloan Fellows

Effective March 1, **E. Scott Pattison, '39,** has been named Manager and Secretary of the Soap and Detergent Association (formerly known as the Association of American Soap and Glycerine Producers, Inc.). Mr. Pattison has been Divisional Manager of the SDA, heading up the Glycerine Producers' Association and the Fatty Acid Producers' Council. He has also been active in the work of the Technical Advisory Council, a group particularly concerned with the relationship of synthetic detergents to sewage treatment and water supply . . . **Richard S. Kaynor, '54,** is Industrial Development Advisor to Peru with A.I.D. in the State Department. Mail address: U.S. A.I.D./Peru, c/o American Embassy, Lima, Peru. . . . **John J. Mahoney, '58,** has become Administrative Assistant to the Plant Manager, South Chicago Plant, Packaged Foods Division, General Mills, Inc. . . . Announcement has been made of the appointment of **Paul O. Gaddis, '61,** as Financial Vice-president of Hitchiner Manufacturing Company, Milford, N.H.—**Peter P. Gil,** Secretary, Room 52-455, M.I.T., Cambridge 39, Mass.

developing markets for the just recently developed titanium pigments. He was named western sales manager in 1929 and was elected vice-president in 1940. He retired in 1945. . . . Mr. Edgerly received his B.S. and M.S. degrees in chemistry from the Massachusetts Institute of Technology. He was a longstanding member of the National Paint, Varnish and Lacquer Association, American Society for Testing Materials, American Chemical Society, University Clubs of Chicago and New York, and the Missouri Athletic Club."

This passing of our president, has somewhat complicated the plans for our 65th Reunion. However, starting with Class Letter, Number 27, April, 1962, which is quoted extensively in Class News in the June, 1962, issue of The Review, and with the answers to this letter which our methodical President compiled carefully and sent to your secretary last summer, together with a careful perusal of the Class News during the past year, members of the Class of '98 will readily be brought up to date and will realize what will be necessary to bring off our 65th Reunion next June.

In addition, the secretary has considerable data, which should be included in Class News. Thus, our distinguished classmate, **Roger W. Babson,** who founded the Gravity Foundation Research at New Boston, N.H., continues his interest in gravity research. Recently the trustees of the Foundation announced the awards for essays on the subject for 1961. Single copies of the first place essay will be sent out by the Foundation on request. The others may be borrowed for one week. If any classmates are interested in receiving a list of the awards for 1962 and 1963, these can be furnished, and will serve to illustrate the increasing interest of scientists in the subject, and the subjects that they are discussing and writing about.

And, speaking about writers, we have in our own class an energetic historian, who is still working on his chosen subject, as will be illustrated by the following article, printed in the January 9 issue of The Patriot-Ledger of Quincy, Mass.: "Needham man, 86, digs into history, by Joseph F. Dinneen. Needham-Dedham, Needham Westwood, Sharon, Norwood, Wellesley and various sundry communities adjacent to them will one day be recorded and memorialized in a history of this section of Norfolk County compiled, written and edited by **Frederic A. Jones,** who appears to be amply qualified for the job. Mr. Jones was born in a now historic house at 16 Maple Street, Needham, on February 2, 1876. He will be 87 years old on his next birthday. He was graduated from Needham High School in 1897. He went on to M.I.T. and was graduated a civil engineer. He is still engaged in that profession, but the histories of the combined towns absorb him. He can be found at least one day a week in the basement vault of Needham Town Hall pouring over the records of the town since it was first incorporated in 1711. He is 'The Answer Man' to questions concerning the causes and effects of all historical events anywhere in Norfolk County. At the age of 86 he is spry and alert, capable of climbing five flights of stairs from the basement vault to the topmost room of the town hall where he is master of all he surveys as he looks down upon the town of Needham and the towns adjacent to it. Currently he has the Needham high school senior students at work fashioning plaques to be attached to all of the historic houses in the town including the house where he was born at the junction of Great Plain and Central Avenues. It was here that the volunteers from Needham, Dedham and the surrounding towns foregathered for the march to Bunker Hill to join the Minutemen and thence to Lexington and Concord; and Jones stands ready to defend his historical research and work against any or all comers.

"In the meantime, sightseers, perhaps even Hollywood style rubber-neck wagons, may move about the town, reading the plaques. Included would be a Rosemary Street house, built by the descendants of early settlers. It is the oldest house in Needham, occupied as a parsonage, built prior to 1713 and was the home of Nathanial Tolman, Jr., who left it on the morning of April 19, 1775, to join the militia rendezvous, already described, to be shot and returned home wounded." Why, you say, this is Fred Jones, the Assistant Secretary of the Class? Sure. Why not? Much of the best Class News has been written by Fred.

There was a testimonial to "Lobbie," '17, held in the M.I.T. Chapel recently, and the secretary attended as a representative of the Class of '98. The letter drafted by President Stratton describes the objective of the service and the persons participating, as follows: "February 19, 1963. To Members of the Institute Community: A memorial service for the late Harold E. Lobdell, who died in Houston, Texas, in January, will be held in the M.I.T. Chapel on Thursday, February 28, at 4 P.M. A member of the Class of 1917, Mr. Lobdell retired as executive vice-president of the Alumni Association last June, after having served the Institute in a variety of posts for 42 years. The service on the 28th will be conducted by the Reverend Dr. Frederick M. Meek, Minister of Old South Church, Boston. Raymond Stevens, representing the Class of '17, and Dr. James R. Killian, Jr., '26, will also participate in this memorial ceremony." . . . Obituary notices about **Leroy Byam, John E. Warren, Edgar W. Norton,** and various other matters of general interest will appear in later issues of The Technology Review. Now it is a question of "All together for the 65th Reunion of the Class of '98 next June." —**Edward S. Chapin,** Secretary, 271 Dartmouth Street, Boston 16, Mass.; **Frederic A. Jones,** Assistant Secretary, 281 Chestnut Hill Avenue, Brighton 35, Mass.

'99

Miles S. Sherrill sailed on the 'S.S. Exeter' from New York on December 19 with Dr. and Mrs. Charles Coryell expecting to land at Marseilles and drive to Paris in a Peugeot car that had been ordered. Three feet of snow at Barcelona changed their plans and they continued their cruise to Alexandria. Miles writes: "the high spot was a view of the pyramids in Cairo at midnight by moonlight, followed by a drive over a desert road in a dense fog to our ship in Alexandria. The Exeter sailed for Beirut at noon." Palma de Mallorca and a jet trip to Barcelona and Nice gave wonderful views of the Pyrenees and the Riviera. The trip to Paris in the Peugeot 404 (Snow Ball) over icy roads and heavy snow via Avignon and Vienne was interesting. They are now in a comfortable apartment—Address, Par Professor Haissinsky, Institut Du Radium, 11 Rue Pierre Curie, Paris V, France. . . . **Hervey J. Skinner** retired as a trustee of the Wakefield Savings Bank and was made an honorary trustee. He had been connected with the bank for 45 years and was its president from 1951 to 1961 after which he was chairman of the trustees. His retirement was necessitated by a new state law which requires that trustees of Massachusetts savings banks cannot be elected after they have reached the age of 72 years.—**Percy W. Witherell,** Secretary, 1162 West Street, Wrentham, Mass. Telephone 11-EV 4-3164.

Happy Birthday

Congratulations are extended during May to 2 Alumni who will celebrate their 95th birthday anniversaries this month; and to 3, 4 and 9 Alumni who will turn, respectively, 90, 85 and 80 this month, as listed below with dates of birth:

May, 1868—WILLIAM G. CURTIS, '90, on the 6th; and THOMAS N. CODMAN, '90, on the 17th.

May, 1873—WILLIAM J. BRICKLEY, '01, on the 18th; GEORGE TAYLOR, '94, on the 24th; and RITTENHOUSE R. MOORE, '95, on the 26th.

May, 1878—ARTHUR C. DAVIS, '01, on the 9th; EDWARD B. BELCHER, '01, on the 22nd; and WARREN A. EDSON, 00, on the 24th.

May, 1883—LEROY P. HENDERSON, '06, on the 7th; WILLARD E. SIMPSON, 05, on the 8th; PAUL SWARTZ, '06, on the 9th; FREDERICK W. CHANDLER, '06, and CHARLES J. RICH, '06, on the 10th; CHESTER R. SHAW, '05, on the 17th; JAMES S. BROWN, '05, and ALDEN H. SPEARE, '05, on the 18th; and CARL E. HOLLENDER, '08, on the 25th.

'00

Clifford Norton, a short-time Course II classmate, writes as follows: "After the end of my freshman year at M.I.T. I changed over to the Lawrence Scientific School at Harvard. Inasmuch as I had passed all of my subjects at M.I.T. they gave me a full entry standing at Harvard for my sophomore year. The reason I changed over was because a Harvard sophomore was looking for a roommate,

and I thought I would get much more socially out of Harvard than M.I.T. I still have a soft spot in my heart for M.I.T. It is without a doubt the best engineering school in the world. I graduated from Harvard in the Class of 1900 and my first job was that of an engineer in charge of construction for the C.B.&Q. Railroad in St. Louis. They were building a six-track entrance into St. Louis prior to the World's Fair in 1903, and I had charge of all the track construction. I later left and became superintendent of Plant 6 of the Atlas Portland Cement Company in Hannibal, Mo., then superintendent of the Chicago Portland Cement Company in Oglesby, Ill. After that I became chief engineer and manufacturing head of the Elevator Supplies Company in Hoboken, N.J., then president of the Graham-Norton Company in New York City. They supplied the elevator trade with all of their elevator signals such as up lights, down lights, etc. In 1929 we joined up with the Otis Elevator Company in New York, and I became chief of the development division of the Engineering Department of Otis. I retired from Otis in 1948 at the age of 70 and started a business called Norton-Murphy Sales Company with headquarters in Newark, N.J. We act as sales representatives for eight different concerns. I am busier than I have ever been and am enjoying life to the utmost, although at present I am laid up with an ulcer on my left big toe but hope to get over it before long. I had a brother-in-law with me during my freshman year at Tech, **Harry E. Osgood.** He died several years ago."—**Elbert G. Allen,** Secretary, 11 Richfield Road, West Newton, Mass.

'01

One by one our classmates are slipping away. I have to report the death of **Stanley C. Sears,** III, died almost a year ago. A letter recently came to me from his daughter saying that he died of a coronary disease in a nursing home in Washington, D.C. He was buried in Arlington National Cemetery. He was for many years a valuation engineer with the Internal Revenue Service at Washington. He retired in 1947. . . . Also I am sorry to tell of the passing of **Ralph H. Stearns,** VI, on February 18, 1963. I had received word from his wife that he had suffered several shocks (reported in a previous month). He was a very loyal classmate and was usually at the reunions. He will be greatly missed. . . . I am writing these notes in March but you will not read them until May. I have just heard from **Willard Dow** that so few said they would go to a reunion it will have to be given up. —**Theodore H. Taft,** Secretary, Box 124, Jaffrey, N.H.

'03

Well, classmates, the clarion call goes forth to one and all, for your postal notice to show your avid interest in our coming 60th Reunion. This event arrives, customarily, with the balmy days of summer and is an ideal time to travel to Cambridge and relax with your wives and grandchildren, who will be thrilled by the panoramic display of M.I.T. and its many departments. Why not set your goal now to attend? . . . Our happy 85th birthday congratulations go to **Frederick K. Lord,** XIII, of New Rochelle, N.Y., who turned 85 on February 5; to **J. Archibald Mears,** V, of New York City, on March 16; and to **Richard F. Spamer,** X, of Lynbrook, N.Y., on March 29. . . . **Herbert M. Morley,** VI, has a new address at 1956 North Wilton Place, Hollywood, Calif. . . . We recently received obituary notices for **John F. Heckman,** XIII, 17 Irving Avenue, Providence, who died on February 11, and **Charles P. Mulherin,** whose last address was Martinez, Germany; and **Edmund A. Garrett,** II, of 279 Washington Avenue, Brooklyn, N.Y., who died on November 13.

The unique M.I.T. chapel with its historical circular moat that occupies the plaza fronting Kresge Auditorium, is open 365 days a year. No regular weekly services are held during the summer, but during the academic year 17 separate religious services are performed every week in this non-denominational sanctuary.

Our much revered Professor Webster Wells, '73, of Rogers memory, who taught mathematics, recently came to your secretary's attention. He passed away on May 23, 1916, at Symmes Arlington Hospital, where he lived after several years of illness. He was born in Boston September 4, 1851, the elder son of Thomas F. and Sarah (Morrill) Welles. He was descended on his father's side from Henry Adams, who in 1633 came from England to that part of Braintree which is now Quincy; on his mother's side he was descended from Isaac Morrill, who settled in Roxbury in 1632. Samuel Adams of Revolutionary renown, was his great, great-grandfather. After preparing at the Allen School in West Newton, he entered the Massachusetts Institute of Technology. After graduation in 1873 he was appointed instructor in the Department of Mathematics, remaining on the teaching staff continuously, except for leaves of absence to study in Europe, until 1911. In that year he retired, having served on the faculty since 1893. He also served as bursar.

Both as a teacher and as author of many standard textbooks, he had a national reputation. He mingled little in society but his knowledge of art and music was of the highest order. He was an enthusiastic traveler and mountain climber, and there were few corners of Europe he had not explored. His memory and range and the accuracy of his information were remarkable. In 1876 he married Emily, daughter of John H. and Emily Dodge Langdon, a direct descendant of Governors Winthrop and Dudley. She has since passed away but undoubtedly enjoyed a long and enviable companionship with his keen personality. His numberless students will ever owe a lasting debt of gratitude.

Our classmates have recently entered the literary realm. **Leroy L. Thwing,** II, has happily announced that his book, "A History of Domestic Lighting through the Ages," has now been published in England. His latest adventure is a translation of "Old Lamps of Central Europe" of Van Benesch's "Das Beleuchtungswesen." . . . Your secretary has furnished an historical account on "North Avenue (Massachusetts) During the Gay Ninety Period," which is now running in serial form in the popular Cambridge Chronicle.—**John J. A. Nolan,** Secretary, 13 Linden Avenue, Somerville, Mass.; **Augustus H. Eustis,** Treasurer, 113 State Street, Boston, Mass.

'04

If you want a system for checking off the months as they flit by, have your name put on the list of class secretaries at the

Deceased

HARRY C. PARKES, '92, June*
ARTHUR W. TIDD, '94, March 9
STANLEY C. SEARS, '01*
RALPH H. STEARNS, '01, Feb. 18*
EDMUND A. GARRETT, '03, Nov. 13
WARREN U. C. BATON, '04, April 30, 1962
ALBERT L. MAGNITZSKY, '04
WILLIAM G. H. WHITAKER, JR., '04, Feb. 21*
RALPH H. JACKSON, '06*
HENRY H. NELSON, '06, Jan. 16*
WILLIAM B. COFFIN, '07, March 1*
JOSEPH D. WHITTEMORE, '07, Feb. 19*
FRANCIS C. V. CROWLEY, '09*
JOHN A. WILLARD, '09, March*
JOHN H. O'NEILL, '10
ARTHUR R. CHAMPAGNE, '12, June 25
ROBERT E. SELBY, '12, Oct. 22, 1961
ALFRED L. HIGGINS, '13, Nov. 7
WALTER H. BROWN, '15, Aug.
WALTER CURRY, '15, Sept. 9*
CARL T. DUNN, '15, Feb. 18*
PRESTON H. EARLY, '15, June 17*
PHILIP O. KEENEY, '15, Dec. 19
CLYDE C. MACKENZIE, '15, May 15*
GEORGE SUTHERLAND, '16, Feb. 27*
BENJAMIN H. WOODRUFF, '16, Jan. 23
PAUL A. DE MARS, '17, March 14
EDWARD F. TWOMEY, '17, Feb. 6*
BERNARD S. COLEMAN, '19, Feb. 15*
O. J. FULREADER, '19, Sept. 28*
FOSTER B. DOANE, '20, Feb. 14
WILLARD A. FLEMING, '21, Feb. 20*
WILLIAM F. DRISCOLL, '22, Sept. 10
WILLIAM T. DUNLAP, JR., '22, May 18
BLAYLOCK ATHERTON, '24, March 17*
FRED C. WAGNER, '24, Jan. 18
THEODORE MILNE, '25, Nov. 20*
PHILIP ALLEN, JR., '31, Jan. 19
EMILE M. BUSTANI, '33, March 14*
FREDERICK G. KAISER, '34, Jan. 22*
PHILLIPS W. SMITH, '35, Feb. 16*
ALBERT G. BUCKLIN, '40, Jan. 15*
THEODORE Q. ELIOT, '42, Feb.*
GORDON C. CAMERON, '51, Nov. 26

*Further information in Class News.

Review office. The ink is hardly dry on one set of notes when a card comes to announce that another batch is due. When there is nothing to record we have to invent something, so today it will be the weather. It has been a cold windy winter in Boston. There has been little snow but plenty of ice. Signs of spring were evident as your secretary walked over the Harvard Bridge this morning and saw a small flock of ducks swimming in one of the few spots free from ice; and it won't be long now before the college crews are out for spring practice. Another sign of spring is the advance notice of Alumni Day activities which has just been issued. The committee in charge is making some plans, and there is no doubt the day will be even more interesting than usual. . . . Three classmates were kind enough to send us newspaper clippings announcing the death of **W. G. H. Whitaker, Jr.** on February 21 at Westfield, N.J. Bill had been in poor health for several months. His entire career was with the Bell Telephone Company in New York and New Jersey. At the time of retirement in 1946 he was chief engineer of the New Jersey division. Bill and his good wife, Wava, attended our 50th Reunion. She and her children have our deep sympathy at this time. . . . **Stan Skowronski** and **Bob Sosman**, who sent notices, gave no information about themselves but we assume they are O.K. . . . **Harry Needham** added the following: "My wife and I are in good health. I celebrated my 81st birthday three weeks ago. We are planning a two weeks' trip to the Virgin Islands in May. We have five grandchildren, four boys and a girl. I still keep active in sports and bridge." Thanks for the note, Harry, and good luck on your trip.—**Carle R. Hayward,** Secretary, Room 35-304, M.I.T., Cambridge 39, Mass.; **Eugene H. Russell, Jr.,** Treasurer, 82 Devonshire Street, Boston, Mass.

'05

As previously noted it's either a feast or a famine as regards class news. This issue will be shorter, perhaps, because Ruth and I are leaving on Monday (March 11) for a fruit-company-freighter trip to Ecuador, 19 or 20 days—doctor's orders (Ruth's continued arthritis, etc.). Thus news must go to the editor over a week ahead of time. It is time, however, to remind you to underline June 10 on your calendar as Alumni Day at Cambridge. We have quite a record of attendance to maintain and we need your attendance at the Alumni Day luncheon, banquet and other opportunities of reunion, as our ranks have regrettably thinned since last June. You will have received registration materials before you read this. Act now. . . . Most of the rest of this column is due to **Andrew Fisher**, although I do remind him that I also read the newspapers and have noted his contributions in advance. The latest honor which has come to the Fisher family is the announcement of the N. H. State D.A.R. Good Citizen award to Miss Elizabeth Hunter, Edith's daughter. This carries with it a $100 bond and a chance to compete for the national award in Washington in April, where she might be competing with one of your clan. It is my hope that someone may write me that I am writing too much of the Fisher family, because it will give me a chance to say that this is an open forum, that others of my classmates may have illustrious children or grandchildren, of whom they may well be proud. So, please give. Elizabeth Hunter and brother Graham will probably be with us on Alumni Day, so why not bring your samples.

I hope those of you, who read only Class News in The Review, did note the article on page 17 of the March Review in which Professor Mickley extols **Doc Lewis** for the wonderful "push" Doc has given his students all these years to get the best out of them. . . . **Hallet R. Robbins'** new address is Orangewood, Apt. 202-8, 7550 North 16th Street, Phoenix, Ariz. All Course I (and other) friends please note. He likes to get letters from the old gang. . . . The rest of the notes have to do with the distaff side of '05. Mrs. **Isadore J. Nye** (Sarah) died on February 15. Miss Alice E. Buff (sister of **Henry Buff)** died on February 25. I have written an expression of class sympathy to Izzy and Henry. These ladies had been so constant in attendance at class reunions, Alumni Day luncheons, etc., that they were naturally considered as honorary co-eds. We shall miss them. I hear quite regularly from **Andrea Lovejoy** and **Isa Barrier,** also honorary co-eds. I wrote in error of Isa selling their summer home at Barnstable. She still summers there, but winters with her daughter at Weston, Mass.—**Fred W. Goldthwait,** Secretary and Treasurer, Box 32, Center Sandwich, N. H.; **Gilbert S. Tower,** Assistant Secretary and Treasurer, 35 North Main Street, Cohasset, Mass.

'06

Little did we realize during our undergraduate days, as we sat on "our jolly old seat of stone," that far down below us were artifacts dating back about 4,400 years! The Sunday Herald of April 1, 1962, contained a long article, illustrated by old prints, about "Boston's 'Back Bay' and What Happened to It." It starts thus: "Just a generation ago, workmen discovered the Back Bay's original residents. When the N.E. Mutual Life Insurance Company razed the Rogers Building, Massachusetts Institute of Technology's first property, they discovered 65,000 stakes used for fish weirs by Indians. The remains of the stakes, whittled with stone axes, were far below the old tidal mark. Carbon analyses showed that the stakes were placed in the sea about 2,500 B.C." . . . Speaking of artifacts, I have recently enjoyed looking over some of my collection of early '06 records and doings, for example, the card prepared—I wish I knew by whom—for the senior Course VI dinner on April 10, 1906, on the back of which I have the signatures of 37 men and 3 profs—Clifford, Puffer, and Laws. Also of interest is the long printed letter dated May 14, 1907, concerning our first reunion and dinner, setting up the class organization, with a constitution, etc. Which reminds me that I received in mid-March a welcome check "for class dues." Many thanks, and is anybody else so inclined?

Every Boston Herald has numerous and worthwhile letters on the editorial page and now and then I find a familiar name at the end of one of them. In February, **Bill Abbott,** VI, up in Wilton had taken his pen in hand to comment on that television show put on by Secretary of Defense McNamara (to convince us that the Commies had pulled out their longrange missiles) and then remind us that "forgotten is the fact that our Monroe Doctrine has been scrapped and the Russians permitted to build a Communist strong point in a strategic position on our coastline where it can dominate the Panama Canal, our southern ports, and the supply of critical materials from South America." . . . Elsie and **George Guernsey,** I, headed south along in February and landed at Boynton Beach, Fla., according to a postcard showing 'winter golf' with a tree full of oranges flanking the green. . . . A letter from **Bob Cushman,** II, reminded me that the West Coast at Portland has a different climate from Portland on the East Coast, although both are about the same latitude. Early in March, Bob said they had been "enjoying wonderful weather for several weeks. Many flowers are in bloom" while around and above Portland, Maine, the snow was from 6 to 10 feet deep!

Sherm Chase had an interesting letter awhile ago from Professor (Emeritus) **Herbert S. Philbrick,** II, which I hope to quote in future notes. . . . Early in March Marion and I had a long phone talk with **Jim,** who has quit driving but with son Norton and Priscilla living nearby he gets around. Sherm and I also have frequent phone conferences, when he isn't off attending a meeting of one of the numerous societies and associations to which he belongs. . . . **Joe Santry,** VI, wrote in February about **Bill Van Amringe** whose death in July, 1961, was reported in the class notes last November. Bill was with '06 our first year, his home being in Roxbury, but in the '05 Technique he is listed as '07, and he evidently did not return junior year. He was active in athletics freshman year playing halfback on the football team, and placed third in the 40 yard dash and 40 yard low hurdles in the indoor meet with Tufts in May, 1903. The Van Amringe family carried on a granite business in Boston and for our 1916 history Bill reported that he was vice-president of Van Amringe Granite Company, after two years in real estate, two years in office equipment, and seven years as a monumental architect, residing at the same address in Roxbury. After W.W.I., by or before 1925, Bill was manager of the Bearse Motor Sales Corporation of Chatham, then salesman with an Albany company, and by 1935 was back in Boston with the R. C. Van Amringe Company. For a few years in the early 40's he was in Maine, and by 1946 had entered the Veterans Administration facility at Bath, N.Y.,

where he spent most of his later years. In the W.W.I. record I find this entry after Bill's name: "Candidate, U.S.N.R.F.(A) Naval Aviation School for Pilots, M.I.T., Cambridge. Entered service 6 November 1918." In his letter to me, Joe Santry referred to Bill's flying: "I knew him quite well before he entered Tech and while he was there. It is my recollection that he was one of our first aviators, and I recall that he flew a plane over the Harvard-Yale boat race at New London sometime about 1910 (?). I played on the football team with him and we were quite intimate." Joe had written to the V.A. at Bath for some information about Bill and in reply, Mr. R. L. Wickham, Acting Chief, Registrar Division, said that he was a patient there from June, 1960, adding: "Mr. Van Amringe spent a number of his last years in V.A. facilities. He was liked and respected by everyone who knew him, and his parting brought a feeling of deep loss to his friends. We very much regret that Veteran Administration regulations prohibit us from furnishing medical information." . . . On January 16, 1963, **Henry Hawkins Nelson, II**, died in a Concord, N.H., Nursing Home; and the Alumni Office has reported the death, no date given, of **Ralph Hahnemann Jackson,** VI, probably in Niagara Falls where he had been living after retiring from the Carborundum Company there. I hope to have these two careers in the June notes.—**Edward B. Rowe**, Secretary-Treasurer, 11 Cushing Road, Wellesley Hills 81, Mass.

'07

Alumni Day, June 10, 1963. This is a reminder to all '07 men in the Boston area to check on your registration for this day. We should have more than six 1907 men at lunch and dinner. If you cannot come for all day, attend one of the meals and, if possible, bring your wife or a guest with you. The Boston Pops orchestra will give the evening concert. Register now before it is too late. . . . **Dick Ashenden** very thoughtfully sent me a letter telling of the death of **Joseph Damon Whittemore** at his home on Great Oak Road, East Orleans, Mass., on February 19, 1963. Dick, **Alexander Macomber,** and Damon were closely associated, as they had gone through grammar school, high school, and Tech together. Dick and Damon were in the same fraternity with **Don Robbins.** At Tech, Damon took Course VI and did his thesis with **L. P. Russell**. As an undergraduate, he was very active as business manager of the Tech Show for two years. Damon was a former vice-president of the Chase National Bank. While in New York he was loaned to the government to work under General Douglas MacArthur in Japan after the U. S. won the war. He served there for two years and after returning to the States, underwent surgery from which he never fully recovered. He has had a heart difficulty for about two years. I wrote a letter of sympathy to his wife Katherine and son Damon, Jr.

It was with a feeling of real personal loss that I read the obituary notice of **Bill Coffin** in the Boston Herald of March 1, 1963. Until very recently, Bill was one of the faithful supporters of the 1907 Boston dinners and reunions. He attended seven out of our last nine reunions at Oyster Harbors. Bill often had bits of news about '07 men that I was able to pass on through these Review notes. Your secretary sent a sympathy bouquet of flowers to Mrs. Coffin on behalf of the class, and received a very lovely note of appreciation from his daughter Ruth. Together with Mrs. Walker, we represented the class at the funeral on Tuesday, March 5, which was held in the First Parish Church of Duxbury. Burial was in the local cemetery. . . . William B. Coffin was 85, retired, and lived at Powder Point, Duxbury, Mass. He was graduated from Harvard in 1899 with an A. B. degree and at Tech received an S.B. in architecture. Early in his professional career, he joined the architectural firm which today is known as Sturgis Associates, Inc. He was a member of this firm for over 50 years. Bill was a native of Newton, although he lived most of his life in Brookline before moving to Duxbury in 1940. Business took only part time of a very full and active life. In Duxbury he served as Chairman of the Board of Trustees of the Duxbury Free Library for 25 years and was a former commodore of the Duxbury Yacht Club. While living in Brookline, he served as a member of the Brookline Planning Board. His memory will be perpetuated through the schools he designed in New England. His family consisted of his wife, Dorothy, a son, William B., Jr., three daughters, and several grandchildren. . . . The Alumni Register has notified me of the death of **Fred W. Tupper,** Course I, as having occurred on December 1, 1957.

Frank MacGregor sent me an interesting book to read entitled, "Strategy and Structure" by Alfred D. Chandler, Jr., Associate Professor of History at M.I.T., and published by The M.I.T. press in 1962. The book shows how the 70 largest corporations in America have dealt with administering an expanding business. It then examines corporate structure as it was developed by four companies: DuPont, General Motors, Standard Oil of New Jersey, and Sears Roebuck. Frank's name occurs many times in the DuPont chapters and **James Barker's**, in the Sears Roebuck account. To someone like myself, who has stayed strictly with engineering, it is interesting to note the impact that various of our classmates have made upon American business life. I recommend that you read the book.—**Philip B. Walker,** Secretary and Treasurer, 18 Summit Street, Whitinsville, Mass.; **Gardner S. Gould,** Assistant Secretary, 409 Highland Street, Newtonville, Mass.

'08

The second dinner meeting of the 1962-1963 season will be held Wednesday, May 8, at 6 P.M. at the M.I.T. Faculty Club, 50 Memorial Drive, Cambridge, Mass. Ladies are invited. Hope you can make it, as plans for our 55th Reunion will be discussed. June marks our 55th anniversary. Our Reunion will be held at the Melrose Inn, Harwichport, Mass., on the Cape, June 7, 8, and 9. Headquarters will be at the Beach House as in the past. This will be our seventh visit with the Smiths. Ladies are invited. When you receive the committee's letter please answer promptly. Monday, June 10, is Alumni Day at Cambridge. Great things are planned, so it will be a fitting climax for our 55th. . . . How about the Alumni Fund for 1963? If you have already given, many thanks. If you have not gotten around to sending in your check, please do so and soon; '08 has always done well in the past. Let's keep it up.—**H. Leston Carter,** Secretary, 14 Roslyn Road, Waban 68, Mass.; **Joseph W. Wattles, 3d,** Treasurer, 26 Bullard Road, Weston 93, Mass.

'09

These class notes consist essentially of the report of **John F. Davis,** II, Secretary of the Reunion Committee. The cards received in answer to 1909's 55th Reunion questionnaire totaled 60; 22 regretted that they definitely would not be able to come; three had no preference as to where they met but hoped to come; six preferred to meet on the Institute campus; nine preferred to go a longer distance from the Institute, 10 to 15 miles. . . . **King Bullens** writes from North Carolina: "I doubt very much if May and I will attend. It's 1,000 miles, three days by auto, a long, long ride by rail and May will no longer fly. If perchance we could make it, we would favor number one on card." . . . **Haylett O'Neill** writes from Houston, Texas: "I regret very much that Ethyl and I will be unable to attend the reunion. We are both feeling our age, and I do not think that we could stand the trip. I have been in the hospital several times during the past 12 months and had two or three somewhat severe operations. Happily, I am feeling much better now and so can begin to think a little straighter." On behalf of the class, the secretary wishes Haylett a continued recovery and sends best regards to both Ethyl and himself. As most of us remember Ethyl and Haylett have been very faithful in attending past reunions, commuting from Houston.

It was good news to receive the return card from **Art Morrill,** XI, from Caracas, Venezuela, stating that he planned to attend the reunion and preferred a hotel. . . . In the reunion notice sent to the class it was noted that the reservation dates at the New Ocean House at Swampscott were uncertain. Recently we have been notified that the dates of June 6, 7, and 8, 1964, are open to us. Should this change the preference of anyone, please notify the secretary.

The reunion letter sent to Colonel **Francis C. V. Crowley,** 201 Blue Bonnet Boulevard, San Antonio, Texas, was returned marked "Deceased, 9/60," the

date being rather illegible. Our records show that his home was South Boston while at the Institute which he attended one term only. He was stationed at several military posts including Fort Leavenworth, Kansas, Fort Ringgold, Texas, and in 1942 was stationed at USA Headquarters at the Great Lakes Sector and in 1944 at the Eighth Service Command, Dallas, Texas. . . . Just as we were about to mail these notes to the Alumni Office John Davis called up (Thursday A.M., March 14) to state that **John Willard** had died suddenly from a throat obstruction. John W. had already replied that he had planned to attend the reunion and that he would be delighted to go to the Cape and "was more interested in visiting with my classmates than in visiting the Institute." John was one of our most loyal and devoted members and his passing is a great loss to the class. We will tell more details in the June notes.—**Chester L. Dawes,** Secretary, Pierce Hall, Harvard University, Cambridge 38, Mass.; Assistant Secretaries: **George E. Wallis,** Wenham, Mass.; **Francis M. Loud,** 351 Commercial Street, Weymouth 88, Mass.

'12

Word has just been received of the death of **Arthur R. Champagne, I,** at his home at 3 Front Street, Maynard, Mass., June 25, 1962. . . . Word from **Jay** and Priscilla **Pratt** tells of their flying down to Acapulco for their 23rd annual trip. Priscilla had Girl Scout meetings in Cuernavaca. On the way down they stopped for lunch with the **Noyes'** family in Dallas and report that they are all well. . . . There is so little news from outside that I will have to give a little about myself. I am still active in business, in fact have just been on a trip to our plants in Crawfordsville, Ind., St. Louis, and New Orleans. I had the pleasure of spending the weekend with my nephew, Alan Shepard, in Houston and was shown where the new NASA project is being developed. I also met most of the other astronauts, the first class as well as the second division of nine who are now undergoing training for future flights. A year ago I was fortunate enough to be with Alan at Cape Canaveral just before Glenn's shot and was shown the gantry launching tower as well as the control room with its supporting batteries of computers and world-wide communications. . . . I do hope for several newsy letters as publication dates come all too often.—**Frederick J. Shepard, Jr.,** Secretary, 31 Chestnut Street, Boston 8, Mass.; **John Noyes,** Assistant Secretary, 3326 Shore Crest Drive, Dallas 36, Texas.

'13

Your 50th Reunion will be a reality just 38 days from the time you read these notes. Will you return to greet your former classmates on Commencement Day? **"Lammy" Lemaire** is leaving Australia about April 15 for the U.S.A. to be present at our reunion. Will you be there to welcome him? You have received an invitation from the Institute to be a guest with your family; can we ask for more? The response that we have had from many of our classmates and from the leaders who have contacted those classmates who have not, for unknown reasons, returned for our past reunions, has been a great satisfaction to your Reunion Committee. Come one come all! We shall never have another 50th Reunion . . . **Charlotte Sage** reports that **Marion Rice Hart,** our air-minded globetrotter, will be with us in June . . . We expect that **Herb Shaw** will exhibit many of his antique clocks and watches . . . **Heinie Glidden** will give a one-man-show of his paintings . . . Maybe **George Richter** and **George Wallace** will demonstrate the scientific art of banjo playing . . . Also **Arnold Wahl** will illustrate nuclear-controlled beermaking . . . Many other skills or hobbies will be shown at your 50th Reunion, Oyster Harbors Club, June 7-10, 1963.

It is with a very sad heart that your scribe was the class representative at the service for **Charles Gerald Fallon,** who departed on March 9, 1963. We all remember Jerry as a member of our successful football team for two years, also his musical ability as well as his cheerful sense of humor. To his dear wife, Catherine, we extend our deepest sympathy. Jerry was an active member of the Newman Club during his years at M.I.T. He served as an ensign in the Navy in the first World War. Returning from the service, he became a manufacturer's representative in the steel industry, in which he was prominent until his death, as the Charles G. Fallon Company of Jamaica Plain, Mass.; for over 20 years he represented the American Hollow Boring Company of Erie, Pa., and the Ohio Forge and Machine Corporation of Cleveland. He is survived by his wife Catherine (Downey), and two sisters, Mollie E. Fallon, South Weymouth, Mass., and Mrs. John (Katherine) Kelly, Andover, Mass. . . . To our Class President **R. Charles Thompson,** we extend our deepest sympathy following the loss of his dear wife, Annie, who passed away March 18 after an illness which had lasted since September. . . . We must extend to Jack Fleckenstein, '19, our thanks for sending us a clipping regarding the death of **John Livingston.**

Heinie Glidden writes: "Since the winter of 1959, when Jane and I were married, we have traveled more than either of us had in all previous years, starting with a honeymoon in Miami. In the Spring of 1961 we sailed on the 'Queen Elizabeth' to England and also visited the Netherlands, West Germany, Switzerland, Italy and France. We then returned to Edinburgh and drove about Scotland and England for two weeks. Then there have been trips to New Brunswick, Nova Scotia, Prince Edward Island and much exploring in our own New England, as well as a marvelous visit to Williamsburg, Va., including Charlottesville, the Skyline Drive over the Blue Ridge Mountains, countless historic spots, Washington, D.C., Mt. Vernon, Annapolis and the Amish country in Pennsylvania. The cameras enabled us to bring home a record of all the high interest points on color slides to enjoy over and over.

"Fred Kennedy came on from San Dimas, Calif., in the summer of 1961 and spent several days with us. One evening, the **Wilfred Barrows** and the **Lee Bowmans** came over for a cookout and we re-lived some of the old days at the Institute. Later in the summer, **Lindsley Hall** came here in the course of a long trip from Portland, Ore., through several of the National Parks and the South, stopping at Williamsburg and New York City. We got together again to swap reminiscences around a backyard barbecue. Jane and I are enjoying the opportunity retirement gives to paint. For two years, I have been president of our Abington Art Association. Have also had several watercolors accepted by the South Shore Art Festivals and exhibitions . . . We are looking forward to the 50th and hope to join the group at Oyster Harbors for part of the time anyway."

Your secretary, after a losing political campaign (the Kennedys still hold sway), has been enjoying research in connection with the Canton and Norwood Industrial Commissions' endeavor to interest NASA in selecting the Neponset River Valley as the site for a $50,000,000-space lab on a 1,000-acre area which meets all the necessary requirements, especially its proximity to the scientists of M.I.T., Harvard, Boston College, etc. . . . If you have not sent in your reservations for Commencement Day and your 50th Reunion, act today; it is later than you think.—**George Philip Capen,** Secretary and Treasurer, 60 Everett Street, Canton, Mass.

'14

An enthusiastic letter came from **Frank Somerby** of Florida. He has retired from school teaching in New York City and his new home is 3901 Bahia Vista Street, Sarasota. He still plans, however, to visit New Hampshire each summer and will take in our 50th Reunion next year. As a sidelight, Frank wrote to a friend that he had just seen an 18-foot snake, but it turned out to be a slight error, as the snake was 18 inches long. That still is too long for a coral snake. I think that Frank may celebrate from time to time now that he has stopped school-teaching! (A thousand pardons, since Frank is active in his local church.)

A letter just received from **Dean Fales** says that he is leaving for the races at Sebring but is not being fooled by the Florida temperature as he will take along all his winter equipment to be on the safe side. He also says that the groundhog has not been seen in Maine since December and the daisy picking will be a few weeks late this year. . . . When these notes appear, Alumni Day will be at hand. Let us have a good turnout. Your secretary is astounded at the M.I.T. buildings currently under construction, not only at their number but at their size and height. In our undergraduate days,

how many of us would have believed that a large woman's dormitory would ever be on our campus? Or married student housing? Come around this Alumni Day and see the new Technology. . . . Also, a year from now, our 50th Reunion will be about to start. Already **Ray Dinsmore** has plans under way, and you will hear from him very shortly. At the same time, he is hard at work to make our 50-Year Gift one of which we will all be proud.—**H. B. Richmond,** Secretary, 100 Memorial Drive, Cambridge 42, Mass.; **Charles P. Fiske,** President, Cold Spring Farm, Bath, Maine; **Herman A. Affel,** Assistant Secretary and Class Agent, R.F.D. 2, Oakland, Maine.

'15

This is another hard column to write with the sad loss of two good classmates. **Carl T. Dunn** died suddenly February 18 in Ozona, Fla., and **Clyde C. (Hoot) Mackenzie** passed away May 15, 1962, at Hyannis, Mass. Carl had attended every five-year reunion and had always taken great pride and interest in class and M.I.T. activities and was a regular and generous contributor to everything. For many years Harriet and he had left their Chicago home and wintered in Florida. Carl was stricken suddenly and passed away a few days later in the local hospital. He was graduated from Mechanic Arts High School, Boston, and took Course II with us. He was a member of the Mechanical Engineering Club and the Rifle Team for three years, being vice-president of the Rifle Club for two years. For many years Carl was with Charles Bedaux Associates and later was vice-president and director of Albert Ramona and Associates. Carl had become an authority on this kind of organizing, investigating and efficiency work. His interests took him all over the world with duties in many, far flung industries.

Hoot Mackenzie was graduated from Taunton High School and had two years with us in Courses X and II. His brother Morrill was 1911, II. Until his retirement a few years ago, Hoot had been with Charles Maguire and Associates, Engineers in Boston. Hoot's friendly spirit and great sense of humor stayed with him to the last. Ten years ago he was operated on for cancer and had eight good years following. He finally was in poor shape and passed away suddenly from a coronary. Since his recent retirement and illness he had been living in Orleans (Cape Cod), Mass., and had become an ardent gardener. He is survived by his widow, Peg, a son, Bruce, and three grandchildren. I have been in touch with both these families and the sincere and sympathetic feelings of our class go out to Carl's and Hoot's families. The memory of these fine fellows will remain with us for a long time.

Our well-loved classmate **Al Sampson** has written a wonderful letter to the Class: "I am exceedingly grateful and pleasingly comforted by your most gracious 'Tribute to Anne' in the March Class News. In these confusing days of readjustment such kind and thoughtful expressions bring back the Faith and the Courage to face the Future alone with Patience and Fortitude. Next to Christmas, Anne considered the 1915 Reunion the high-light of the year. It was a day to spend among old acquaintances whom Time had mellowed with Grace and Understanding and an Acceptance of the Frailities of the Gay Blades of Yesteryear. Each year she became more enthusiastic as not only did she renew old acquaintances but the thrill of the newer and deeper contacts were exhilerating, too. Meeting the sons and the daughters was always a 'glowing' experience. Next June 10 gives us all the opportunity to add another Memory we may cherish with the years. May such always be as helpful as mine have been to me. So, thanks again Azel to you and all my loyal Classmates who by their kind acts and messages to me when the 'clouds drew low' helped me find a few badly needed rays of sunshine."

A few reactions from our New York Class Dinner, January 25. **Ralph Hart** sent his 3-D pictures and viewer to me for our Boston dinner on April 5. Many thanks, Ralph. . . . **Henry Daley:** "I am sorry I was forced to cancel my reservation for the New York dinner at the last minute and missed getting together with the old stand-bys." We all missed you, Henry, and are glad you have completely recovered from that sudden illness. Funny man, **Bur Swain,** worked so hard with **Larry Landers** setting up the dinner: "Yes we had a good party at the Chemists Club and I say again, I hope to be present next year." . . . **Whit Brown,** went for the first time: "I must say that trip was one of the most enjoyable that I have had for a long time; I really felt as though I got to know the fellows (even though I picked up a lulu of a cold which kept me miserable much of last week!)" . . . **Ben Neal,** winnah of the long distance prize from Lockport, N.Y., wrote: "When I returned home I was mighty glad that I went to the New York meeting, especially since the stormy and cold weather made me a little reluctant in anticipation." . . . **Wally Pike** and his business associate, Herb Cleverdon (secretary of another good class, 1910), attended the M.I.T. Fiesta in Mexico City in March. Wally's report will be interesting for future notes. . . . This is a good place to insert a plug to remind you to pay your class dues—no high pressure follow-up on this. In answer to my request for personal news on that dues letter, **Ralph Curtis** wrote: "Nothing doing, you know too much about me already." And **Jerry Coldwell:** "Nosey! As if you don't already know my life history." In answer to this good natured legpulling by these stalwarts, I can only say —well, all I do know is GOOD! Of course, each one sent a generous check! The many pretty Christmas cards we received from classmates and friends and families of the class warmed our hearts with a deep and sincere feeling for these fine old friendships.

Herb and Alice **Anderson** were at Pompano Beach, Fla., for March and April. We are all glad to know Herb is back in circulation. . . . **Doug** and Elizabeth **Baker** and **Boots** and Helen **Malone** practically extracted a promise from us to visit them in Vermont this summer. We hope to, really. . . . Imogene and **Warren Cowles** sent us a box of delicious salted nuts for the holidays. Then they took off for some warm place during the winter, but will be with us at Al's June Class Cocktail Party. . . . **John Dalton** is enjoying his bridge tournaments and retirement in Providence. . . . **Otto** and Helen **Hilbert** took a freighter trip in January, 1962, to Trinidad and all the British West Indies. After six weeks in Florida, they returned home to Corning, N.Y., and then went on to a Rotary convention in Los Angeles. In September they spent a lot of time in South America. Otto says that being retired, he can take these long freighter trips leisurely. . . . **John** and Lee **Homan** are enjoying their retirement at Indian Rocks, Fla., where they exchange Martini formulas with the near-by Hiltons. . . . **Ken** and Esther **Johnson** have had more than their share of illness and really tough breaks, but Ken's unmatchable and rich sense of humor keeps them going: "In July and again in September I made visits to Riverside Hospital. The latter trip to determine whether I had cancer of the right lung. A little exploratory job indicated I had only a bad infection, not cancer. My opinion was not asked for. If it had, I could have told them the trouble was merely a slight disorder caused by smoking cigarettes for the past 45 years. However it gave the surgeon a little of my boodle, the rest of the assistants practice in ramming crooked plumbing down my gullet and to me, the first lesson in sword swallowing! As a guinea pig, my carcass has survived many a job of this type." . . . At Christmas time Bur Swain had just returned home from a surgery job which he hilariously described to us at the New York Class dinner. He can eat and drink anything (which he does very well) but is not permitted to shovel snow. Who wants to, anyway?

With her artistic talent Bee **Norton** had drawn a cute picture of their homestead and farm buildings at Martha's Vineyard. . . . **Gabe** and Tess **Hilton** wrote from Clearwater: "Happy Christmas, with the temperature 20 degrees here today, December 13, we are about to move permanently into the Martini department. We have lost all our shrubs and plants and there probably is not a poinsetta plant left in Florida. Now that the sickness scare here is over, the Cuban fracas, the loss of the Citrus crop—how about taxes? Happy Christmas." Ah, me, maybe, this miserable New England climate isn't so bad after all . . . **Walter Curry** died September 9, 1962, in Newport, R.I. For 18 years, previous to his retirement in 1952, he had been an associate justice of the Superior Court of Rhode Island. . . . **Preston H. (Pete) Earley** passed away June 17, 1962, after a long illness, in Chicago. I remember him as a handsome actor in our early Tech Shows. I've sent our class feelings to both families.

Aloha! What a thoughtful class secretary you have. When you are reading

this column Fran and I will be crossing from Auckland to Sydney, Australia having stopped at Bora Bora, Rarotonga and Papeete—story book ports. Because of The Review's deadline, it is impossible to tell you of the Class Reunion and dinners we expect to have in L.A. before we sail (this is now March 9). But that and the similar one in San Francisco, upon our return there, will make a big November (really) column for you. . . . In our once politically proud (but not now) Commonwealth of Massachusetts, a low figured automobile license plate is really status and ranks with membership in the D.A.R., ancestors on the "Mayflower" and an upper tier box at the Red Sox Fenway Park. Massachusetts License plate 54 belongs to our own **Gordon R. Jameson** of Duxbury, Mass., a retired mechanical engineer. The Boston Morning Globe recently had a big story with pictures about Gordon, his hobbies and his family ownership of number 54 since 1909. He said he had been offered $500 for the number. . . . Now, if you are one of the 25 regular fellows who paid their dues in 1961, but not so far in 1963—how about it—and "Help."—**Azel W. Mack,** Secretary, 100 Memorial Drive, Cambridge 42, Mass.

'16

Just a month to go and the 47th Reunion is here—the 47th! Like birthdays they seem to come rolling along but they are more fun. So, as good old whudder-we-call-him **Ralph Fletcher** says: Remember the dates, June 7, 8, and 9! Mark them on your calendar, or whittle them on your fishing rod, or do anything else you want to with them, but don't pass them by!

Here's something for Sixteeners to keep in mind and not miss the next time they visit the Institute—an 18th Century Flemish tapestry, "Return of the Prodigal Son," which hangs in the Humanities Reading Room, on the second floor of the Hayden Library. And why? Here's the story, as we got it from **Walt Binger** only recently: "On the death of her mother, my wife came into the rather important collection of antiques purchased by her grandmother in 1870-1880 on her travels in France and Italy. (This at a time when the world was buying Victorian furnishings.) Included was a large tapestry, 9 x 15 feet, which neither we nor our children could use because of the ceiling height required. My wife had just made other gifts (including first choice, after family, of a 5,000-book library) to her college, Bryn Mawr, so she said I could offer this really fine work of art, the 18th-century Flemish tapestry, to M.I.T. It was accepted by the Institute on the recommendation of the Art Committee." As you enter the reading room you will see the tapestry on the near wall to your left and adjacent to the office of Dr. Locke, the Director. As for Walt, not having worked for an employer, there is what he calls "the disadvantage of not belonging to a retirement plan but the countervailing advantage of not having to retire." But he adds: "As long as people are foolish enough to employ my consulting services, I have the joy of practicing consulting engineering."

Cy Guething's message from the Pink Sands Lodge, Harbour Islands, Bahamas, includes: "Here we are trying to keep healthy enough to be with you all come June. We sure plan to be there at the Oyster Harbors Club and hope to have a large gathering." We hear about this famous pink sands beach from both Cy and **Steve Brophy,** who place this three-mile-long out-island of the Bahamas, high on the list of where-one-should-really-go. . . . The February Newsletter of the M.I.T. Club of New York included three 1916 names so we couldn't resist a little repeating. On page 1: "At the much heralded Silver Stein meeting this month were many members with a long-time interest in your club: Steve Brophy, five-year president of the M.I.T. Club of New York, George Dandrow and Ed Goodridge, past presidents, Fred Lehmann and Don Severance from the Institute, to name only a few." And page 2 gave this brief: **"Joe Barker,** long-time active member and steady monthly class luncheon attendant, is receiving the Charles F. Kettering award for meritorious work in patents, trademarks, and copyright research and education. Another M.I.T. graduate to receive this award since its inception six years ago was **Vannevar Bush.** Since Joe graduated from the Institute over 45 (really over 46) years ago, he has cut an enviable path in education and research that includes his tenure as head of the Department of Electrical Engineering at Lehigh University, followed by his position as Dean of Engineering at Columbia for 16 years, beginning in 1930." Note: 1916 (and 1917, we might add) monthly luncheons at the M.I.T. Club of New York, Thursday following the first Monday of each month, Biltmore Hotel, 12 noon.

Frank Darlington notes that the most unusual thing that happened to him last year was President Kennedy's decision to make the Morton Downey house, across the street from him on Squaw Island, his summer White House. Says that: "Lighted buoys were put off our point in Nantucket Sound to help the Coast Guard from fouling propellors on the rocks; white telephones with pictures of the Washington White House on them were installed giving direct communication with the Secret Service; and sentry boxes appeared at each end of the causeway with a policeman and a Secret Service operative at each one. So we went to Hyannis Port in fear and trembling, half expecting to be forced to go to Chatham for the summer to escape the hoop-la. Our fears proved groundless; we had better privacy than ever; never laid eyes on our next door neighbor (Senator Teddy) all summer and saw the President only once (from the rear). Only restriction was the necessity of providing guest lists whenever we gave parties. Even taxi drivers had to have clearance via the white telephones. Our friends in Hyannis Port were not so lucky: the stream of sightseers—averaging about 12,000 cars a day—was a never-ending annoyance and at times a distinct danger. But poor Hyannis Port will never, I fear, be quite the same lovely retreat that it used to be (I have been there every summer since 1897)."

It's long after Christmas, but any topic is a good topic if **Irv McDaniel** writes about it. And Irv did give us a most descriptive outline of what he and Katherine did in the way of decoration at their Villa dos Estrellas, Arroyo de la Miel, place in Malaga, Spain. He writes: "The entire house was decorated and Kay's piece de resistance was our enormous stone fireplace with wreaths, madonnas, angels, etc.; and coming down from the rafters was a very large 17-pointed star. Then she made a mobile to end all mobiles from large Christmas tree ornaments of exotic shape and exciting colors; I think they are new and from Germany. It was magnificent. My share was the Christmas tree; we have a big planter between our dining room and a very large living room. On the planter is a wrought iron screen—about 10 feet wide by 15 feet high. On this screen I worked in the tree—different. Then we had three parties in order that every one could see it. Our Christmas Eve party was also different; we just had our best American friends in and showed our pictures. . . . We made a pictorial pilgrimage—St. Paul's (Acts 18 to Acts 25)—starting off with the Temple in Corinth, then to Ephesus where St. Paul declaimed the many-breasted "Diana of the Ephesians." (Incidentally, the archeologists now think that they were not breasts but eggs.) Then we continued his pilgrimage to Baalbek, Damascus, the Dead Sea, Jerusalem, and finally came to Bethlehem—with a picture of the bells as Jody and Frank's record played "Joy to the World" with organ and carillons." Irv and Katharine expect to arrive home in California about the end of August of this year.

Stew Rowlett wrote late in February that he had been thinking for several weeks about what to say, for after all, he says, he and Helen are leading quiet lives down in Clearwater "not traveling to far reaches of the earth—but at least we have our memories of those days when we did." Says they don't have time "to get bored, have met loads of swell people, some friends from the North, play bridge once in a while, somebody is always planning a cocktail party or tea," and that he himself has found most relaxing and rewarding his new work on portrait painting (oil) with "Paul Leavey, one of this country's really good portraitists." Painting is something he started several years ago, as a non-golfer, in preparation for retirement. The Rowletts suffered a bit from the December freeze. Of the over-100 plants, trees, etc. they had added since building their new home, they had lost "many of the lovelier things like hibiscus, Ixora, and Allamande," but their 17 rose bushes came through well and were blooming profusely. Further, "I had a phone call from **Duke Wellington** from St. Petersburg. We had them up for lunch last week, and we joined them for lunch down at

'Port O' Call.' That's the new razzle-dazzle spot Guy Lombardo is promoting with Murchison and Teamster Union money. It's interesting to see just once. Duke suggested we run down to Sarasota to look up **Emory Kemp.** We'll do that soon."

Paul Page Austin keeps busy in San Francisco. Last fall he left Rogers Engineering and joined the Western Knapp Engineering Company where he is rated as a principal engineer: "Our activities are mostly in the mining engineering field, design and construction of copper smelters, iron ore benefication plants, and also chemical plants—phosphorous refining and potash plants. For a while I worked on a potash plant that is to be built by the Arabs in Jordan, at the south end of the Dead Sea. The border between Jordan and Israel runs past the plant site, and there is a large potash and bromide plant on the other side of the border, operated by the Israelis." In February he was transferred to another job, the Palabara copper smelter at Phalaborwa, Republic of South Africa. "The mine is about 180 miles northeast of Johannesburg. This is a joint venture between Bechtel and Western Knapp Engineering, so I am now back at 101 California Street, in the Bechtel Power and Industrial Division, where I have lots of friends." He mentions he used to see **Dick Fellows** once in a while when he was with Rogers Engineering, but has not seen Dick now for about a year. . . . **Pete Mahlman** lives in Youngstown, N.Y., close enough so that he visits back and forth with his daughter and family, including five grandchildren, in Lewiston. In March he left for a visit to his son George, '48 (Sc.D. in physics) and family in California. Pete, as a widower since '54, had a number of family activities in the last two years. In '61 his oldest sister, who lived near Rochester, became very ill and for over a month he cared for her in her terminal illness, then aided the executor in the sale of the home and disposal of personal effects. In September Pete went back to his old home town of Lubec, Maine (consult your atlas to see how much further east and north you can go beyond Lubec), to help his second sister, then 81, sell her insurance business.

The **Harold Grays** had a 10-weeks round-the-world trip last fall with another couple. They flew to Zurich, drove through the Austrian Tyrol to Salzburg and Vienna, flew to Delhi with stops at Baghdad and Teheran, visited many places in India, Nepal, and Ceylon, went on to Bangkok, Hong Kong, saw Macao, and had about two and a half weeks in Japan before their final 10 days in the Hawaiian Islands. Harold says he's hesitant about writing us after the precedents set by **Irv McDaniel** and **John Fairfield** with their colorful stories of travel, but we have copies of two or three letters he wrote to others. They felt that they really hit the 'East' when they landed in Baghdad: "The country has a dictator who only four years ago murdered the king, the prime minister, and many others. It is a real police state. Before leaving I bought a copy of the European edition of 'Time.' They had censored it and torn out four pages of political news. The country is very poor and extreme poverty is everywhere. They will not let you photograph anything that shows poverty or backwardness of the country. Teheran in Iran is quite different. There is naturally some poverty but no where near so much. The bazaars are clean, not filthy. Our hotel had a nice swimming pool that we patronized. We had two and a half days in this country—just fantastic." The first day they flew to Isfahan, the old capital and the center of handcraft work and Persian art now and for centuries past. "They do everything—silver, miniature painting on ivory, rugs, jewelry, copper, bronze, ceramic tile, handpainted boxes, etc., on paper maché base and wood." We were intrigued by his description of the work on a really good rug. "In Isfahan we went into one of the rug factories making rugs similar to the Kashan and Kerman types. A 9 by 12 rug will have four weavers knotting the pile. They will work on a single rug for a year to a year and a half. There is one head weaving woman and the three child assistants who fill in as she controls the design. On one loom there was one girl 7 years old and two others probably 10 to 14. Their pay is about 65¢ per day. The 7-year-old was fantastically fast with her little fingers pulling through the filling pile between the warp threads." Harold has most interesting notes on people, palaces and patterns as they took trips from headquarters in New Delhi to Srinagar in Kashmir, to Agri and the Taj Mahal on a 100-mile trip on a one-car-width black-top road "mile after mile with groups of cows or sheep and goats with their attendants going in both directions on both sides of the road," to Jaipur, to Udaipur, then to Kathmandu in Nepal, to Banares and then to Calcutta. Harold speaks of the lovely palaces. The one they stayed in in Jaipur, the Rambugh Palace Hotel, "like many of the palaces of the Maharajas, has been turned into a luxury hotel." Then: "Jaipur is the center for jewelry, ivory carvings, stone cutting for jewelry and many other things. There are over 16,000 people employed in cutting and polishing precious and semi-precious stones, including star rubies, topaz, amber, turquoise, etc. We visited one of the many jewelry stores and bought a couple of small souvenirs. This was the same store visited by Jackie Kennedy when she was over here a while back. The maharaja gave her an expensive necklace, the Indian government gave her something equal in value and her retinue of over 40 people just about cleaned out the store. Our guide said that he went in there the next day with some tourists and the owner told him that he had practically nothing left. We have run into Jackie's trail about everywhere recently: Delhi, Agri, Jaipur, Udaipur, and Banares. She really went to town; they turned out the red carpet for her much more than we read about it in the papers at home." Harold describes Kathmandu in Nepal as the most primitive place that they have seen. Here they ran into 72 Peace Corps boys and girls—comments maybe next issue.

Jim Evans continues his revitalized spark-plug substitute teaching in the Paterson, N.J., High School and is enjoying it no end. At the March luncheon in New York, he and **Herb Mendelson** alone represented 1916. Jim says **Theron Curtis** advises him not to think of trying any of these new 50-mile walks, that Dot Smith, (sister of Ruth, Mrs. **Emory Kemp)** is on the look-out for Dyed Gulls for him on the Cape, and reports that Emory's daughter, Virginia, is still recovering well. He says that Gene McDonald, '13, writes of meeting **Walt Binger** at a lunch club on Pine Street and meeting **Jim Ralston** at the Lambertville House on February 15. . . . **John Gore,** who missed the last reunion because of chairing a big Scoutarama, expects to be at the 47th this June. As a nature lover, he doesn't mind the snow and cold in Canajoharie but "will be glad to see spring once more with the birds, flowers, and warmer weather."

Your secretary had the pleasure of dining with **Joel** and Virginia **Connolly** in the La Placita restaurant in Old Albuquerque last week (March 5). They are staying temporarily (until June 10) in Albuquerque, caring for the home and pets of two of their friends who are on a trip around the world—former colleagues of theirs in Public Health service. The home is lavishly furnished with treasures from India—rugs, huge bronze and brass works of art, museum pieces. Ten years ago last December, Joel and Virginia began a decade of wandering which included three years in the Philippines and six in Taiwan (Formosa). Their trips around the world, each by a different route, partly by sea and partly by air, gave them insights into the life of many peoples. Undoubtedly, the most satisfying thing about this period is to know that their work prevented much needless suffering from preventable diseases and many deaths from the lack of sanitation. Joel noted that, in underdeveloped countries, safeguarding the quality of the drinking water is of paramount importance, in preventing intestinal parasitism and diseases. Malaria eradication has made great strides in both Free China and the Philippines. Last year they took a 20,000-mile auto trip that took them to both borders and both coasts of the U.S.A. Joel, since retirement from the Public Health service, in Taiwan, continues active in Rotary and has given many rotary talks on the Orient and public health matters. We wish his schedule in Albuquerque could be changed so that he might attend the 47th in June.

Len Stone's card from Magens Bay, Virgin Islands early in March declares: "This sure is better than working! And the snorkeling is superb. Saw Judy of the A.T.&T. at St. Croix but he disappeared before I could talk to him. Off to St. Maartens tomorrow, then to Antigua and Tobago and home April 1. See you at the April luncheon." The Stones always make the Caribbean trips sound awfully good. . . . Messages from the **Steve Brophys** in Jamaica also make us wonder sometimes why we choose to stay at home

with the snow shovels and icicles, but isn't it supposed to be healthful for us to go through extremes of hot and cold as we do? . . . From a more distant source "En route Pago Pago to Hawaii" come words of a travel trip to New Zealand, Australia, and some of the Pacific Islands from **Elsa Mueser** (and Ed, Columbia, '15). In New Zealand they saw "the geothermal wonders, the new plants for converting the superheated steam into electricity, the rocky hills of old volcanos covered with entirely different fauna, the beautiful fiords of the South Islands," and even hiked "with ropes and hob-nailed boots on the Tasman Glacier under the highest mountain, Mount Cook." In Australia "through a lucky chance", they were "VIP guests of the Commonwealth and were conducted around the Snowy Mountains by a young engineer. We lived in the old staff headquarters, one comfortable room for each person. The Snowy River drains the eastern side of the Divide and flows southeast through the well watered coastal belt of Eastern Victoria." Elsa says it was most interesting to see in various stages of completion the 9 dams, 7 main tunnels, and 11 power stations—a total project to be completed in 1975. On shipboard Elsa was crowned "Queen of the Beachcombers" at a ball, because of the most original costume. Her costume "was a mask of an old stocking with a wig of wool and carrying in my dilapidated way two infants of painted grapefruit." . . . The **Don Websters** continue to report rest, comfort, and enjoyment in Bermuda. They return by ship to New York on April 5, just too late, we and they are sorry to say, to attend the April 1916 New York luncheon on April 4. They remembered (and no doubt Jim Evans kept reminding them) that these luncheons come on the Thursday following the first Monday of each month. . . . **Val Gooding** tells of returning home to Longmeadow, Mass., from a holiday visit to their daughter in Minneapolis and finding their gas burner had conked out and the house frozen up solid. Carpenters had to take up flooring, open up partitions, and cut a hole in the ceiling so the plumber could replace half the pipe system. Says this is the first time he has called on the insurance that he's been paying for many years: "I sure collected several years premiums in one whack. It shows life can be kept interesting."

We regret to report the death of **George Sutherland** on February 27 in Woodbury, Conn., after a long illness. George retired as an engineering executive from Consolidated Edison in 1949. As reported in the American: "He had served with the construction survey and location development in connection with the electrification of the Canadian Pacific and New Haven Railroad systems. He had also worked with the engineering firm, Stone and Webster, Boston. After retiring from Con Edison, he spent two years abroad as head of electric power development in 18 countries under the Marshall Plan." George graduated from Yale in 1907 and later got his S. B. degrees from Tech and Harvard. He also studied at the Sorbonne in Paris and served with the Army expeditionary forces as a pursuit pilot in World War I. Later he was commissioned in the Air Force as a first lieutenant. In 1921, he joined Con Edison as assistant to the electrical engineer of the Duquesne Light Company, Pittsburgh, and returned to Con Edison in 1938. During another leave of absence he served with the War Production Board in Washington and was in charge of the Utility Group of the Conservation of Strategic Materials Division. Returning to Con Edison, he was general stores manager and later manager of substation operation." He is survived by his wife, Mrs. Ruth (Trench) Sutherland, a son, two daughters and nine grandchildren. Burial was in Fort Plain, N.Y., where he was born. . . . We have word from Mrs. **Fleming**—appreciation for the letters of sympathy received from members of the Class of 1916, relative to **Flipp**'s passing.

Re the collection of 1916-own-made Christmas cards to be displayed at the 47th Reunion, **Bill Drumney** adds his card—a beautiful one! . . . That completes the news for this time. We have letters from Dick Berger, Aime Cousineau, Charlie Lawrance, and Ed Weissbach, and we have a clipping on **Tom McSweeney,** the Rock Hound, but these must wait for the next issue. So, now, mark your calendar May 9 and June 6 for the next two class luncheons in New York, and mark down especially the dates June 7, 8, and 9 for the 47th Reunion on the Cape. Expect details regarding the 47th through the mails but remember it all starts Friday afternoon. And if you know of any '16er who is ill, one who should receive letters from some of the gang, send the information to your secretary.—**Harold F. Dodge,** Secretary, 96 Briarcliff Road, Mountain Lakes, N.J.; **Ralph A. Fletcher,** President, Box 71, West Chelmsford, Mass.

'17

Arrangements are being made by **Tubby Strout** and his committee for an informal pre-Alumni Day class get-together at the Publick House, Sturbridge, Mass., beginning Friday afternoon June 7 and continuing into Sunday June 9. Alumni Day at Cambridge is scheduled for Monday, June 10. Those who come from a distance may wish to remain at the Publick House until Monday morning. The rates will be $18 per day per person for two people in a room, and $20 per day single, American Plan. Treadway Inns are famous for their excellent food. Although wives are invited, this should not keep stags away. There will be opportunity for ladies and classmates to have separate entertainment. There are plenty of golf facilities in the area, and Old Sturbridge Village, only a mile away, is a must for any who have not seen it. The swimming pool will be ours exclusively. The Tap Room of the Publick House will be set aside for our meals. Any who wish to avail themselves of this opportunity please contact Henry E. Strout, P.O. Box 143, Osterville, Mass., upon receipt of these notes. A deposit of $10 is necessary to guarantee your reservation. The extent to which this proves to be an enjoyable weekend will determine whether or not it should be repeated.

A memorial service for **Lobby** was held in the M.I.T. Chapel on Thursday, February 28, at 4 P.M. The service was conducted by the Reverend Dr. Frederick M. Meek, Minister of Old South Church, Boston. **Raymond Stevens** represented the Class of '17, and Dr. James R. Killian, Jr., '26, participated in this memorial ceremony. A considerable number of 1917 men were present at the service. Dr. Killian spoke most graciously about Lobby and particularly about their close personal relationship. Conchita Lobdell was present and was entertained following the ceremony by Mr. and Mrs. Ray Stevens, Mr. and Mrs. Al Lunn and Mrs. Pitré. Ray Stevens' remarks at the ceremony are quoted herewith: "Dr. Jason Mixter quoted a favorite aunt as saying that the world needs more taffy and less epitaphy. A source of satisfaction to those of us assembled at this memorial service to Harold Lobdell is the knowledge of the spontaneous expression of goodwill, appreciation and affection given him in the months immediately preceding his retirement.

"The expression came with wide geographical, age and interest distribution. There were testimonial dinners, letters, visits and finally a tape recording of oral greetings from his hundreds of friends in the M.I.T. family.

"The barrage of greetings and recognition emphasized the special character of Lobby's service to M.I.T. and to M.I.T.'s enviable type of alumni strength and support. For he represented the close, warm bond of the M.I.T. Alumni and did much to develop, strengthen and humanize that bond. More than to any other member, Harold Lobdell's own Class of 1917 owes to him appreciation for the satisfying character of its continued relationships as a class and with M.I.T. and its men and affairs. From his freshman year, Lobby developed his quiet but powerful influence in an ever widening circle.

"Lobby's characteristic touch became apparent in early undergradutae years. He studied architecture, but many of his friends never knew his course of undergraduate study. They knew him for his activity with and for other people, his interest in them, studying them, fostering their interest in each other and in M.I.T. His scholarly book on the early postal stations of Hong Kong could have been matched by one on men of M.I.T. His fantastic reservoir of personal items he could and did bring into rapid counter-attack if a friend were rash enough to touch him on a tender spot.

"Lobby was a sensitive soul, gregarious yet hiding his true personality, seeking respect and friendship, living at times a lonesome, withdrawn life while surrounded by people. His most intimate friends were never quite sure they knew the true man.

"Lobby became an M.I.T. legend long before he retired. His work as editor of the undergraduate paper, his participation

in summer school at Machias, Maine, his personal activities as an officer in World War I, his period as Dean of Students, and then his outstanding work in making The Technology Review a model among alumni magazines, his career as leader of the alumni organization—served to weave his personality through the web of Technology men. He was unique even as an undergraduate when his open and articulate rebellion against compulsory physical activity, his wide acquaintance, his ready wit and his editorial activity combined in an unclassifiable, potent character never to be forgotten and later always a center for reminiscence.

"As he traveled in his official alumni capacity, he found everywhere classmates, graduates who had known him as dean, Alumni who knew him through his having drawn them into active M.I.T. service, who welcomed the opportunity to receive him as guest. Fortunate were the hosts on his travels not only for the unforgettable uniqueness of his personality and his delightful social contribution, but for the correspondence that followed, thoughtful product of his facile pen, unhurried, gracious and with a delightful whimsical flavor of its own.

"Those of us who knew of his occasional periods of concealed loneliness were glad indeed when he found in Mexico a wife who made the years of the rest of his life the happiest he had known. Conchita became a part of the Lobdell legend, welcomed warmly into his great family of friends—perhaps initially because of the obvious new life she brought him, and then increasingly in her own right, to become an honorary member of his Class of 1917 and one of M.I.T.'s personalities, part of its tradition.

"Even if Harold Lobdell were a more stereotyped individual, there can never be a match for his particular niche in the M.I.T. world. His characteristics, skills and interests fitted marvelously into the period of M.I.T.'s transition from the Tech on Boylston Street to the M.I.T. that finds itself a world focus for matters of greatest current universal attention and concern.

"Lobby will continue to lend color to the whole M.I.T. atmosphere for the legion that knew and had affection for him. His timely contributions to the magazine he created, the student fund activity he started, the alumni geographical foci he fostered, the traditions he initiated will continue indefinitely to serve the Institute for which he lived." As indicated in Ray's memorial speech, **Al Lunn** on January 18 sent Conchita Lobdell a letter expressing "the spontaneous request that Conchita be made an honorary member of the Class."

Edward F. Twomey died on February 6. He was a vice-president of Morris Knowles, Inc., of Pittsburgh, Pa., consulting engineers specializing in the field of sanitary engineering. Edward was born at Lynn, Mass., on June 30, 1895. He graduated from the course in Sanitary Engineering in 1917. He had been with Morris Knowles, Inc., continuously since a week after graduation, with the exception of a stretch in the Navy from 1917 to 1919 and again from 1943 to 1946. In 1946 he joined the specialist reserve of the Army and spent the major portion of the time with the advance section of the Supreme Headquarters in Europe.

Justin Basch reports a winter vacation with his wife at a health "Sea Spa" in Hollywood Beach, Fla. While on "vacation" he lost 14 pounds in 14 days through a combination of 800 calories a day, exercise, and steam baths. He recently met two Pennsylvania classmates **Samuel Clayman** and **Henry Goldsmith,** whom we have not heard from in class notes for a long time. Sam is reported retired, healthy, and happy with a married daughter, three grandchildren, and a son who is finishing law school. Henry Goldsmith, who attended our 45th Reunion, recently sold his business (Thomas Holmes Manufacturing Company, Philadelphia) and is partially retired. . . . **Lucius Hill,** our custodian of class funds, went to Canada in February where he and Mrs. Hill were on the team representing the Royal Caledonian Curling Club—the grand-daddy of them all. Except for the usual winter cold, Loosh has been as spry as ever. . . . **Bob Erb** reports leaving on a vacation in the South in mid-January hoping to get rid of a mean virus which has plagued him since before Christmas. . . . **Stan Dunning** reports a pleasant auto trip to California via the southern route. He wrote from Pasadena that his wife was in the hospital with an attack of pleurisy. They expect to be back in Cambridge about April 1. . . . **Bill Neuberg** left February 9 for a couple of months in Florida to enjoy life while aiding his son-in-law in the mothproofing business. . . . The New York monthly class luncheon in February turned up three visitors, Ray Stevens, **Leslie Groves,** and **J. R. Spalding,** formerly with Union Carbide.

Joe Littlefield, who since retirement from Johns-Manville has been research director for the Financial Executives Research Foundation, Inc., in New York, is just about as busy as any retired person can be. He writes: "I've been slow about sending in my class questionnaire, but manuscripts have been piling up—the pipeline being filled—and I really have been working not only week days but Saturdays and some Sundays as well. The pressure is a little less now, but now I have to start organizing for several more projects to be started this year, and I hope to get back to my own research project" (which, I think, is to be a book of his own). Joe's retirement philosophy is as follows: "Keep busy with something that is so interesting that it is preferable to any other activity. Whether it produces income or not depends on the needs of the individual, but people our age should not let the money-making urge distort things. The important thing is to become free of worry—any kind of worry—and that means, sometimes, the realization that the present situation is one about which nothing can be done. The real question is how does one adapt one's self to that situation with a maximum of happiness and a minimum of worry. If one has to move into a place where living costs are lower, the sooner it is done, the sooner one gets adapted to a situation which, after all, may prove to be very pleasant. I am happy to stick to the one thing I find I can do well, and enjoy doing it. I get great satisfaction from every book that we produce at the Financial Executives Research Foundation. Our latest is 'Mergers and Acquisitions. Planning and Action' which was researched for us by A. D. Little, Inc., under the direction of G. Richard Young, '37, Course XV, who also has an SM in Course XV. Therefore, this book takes on a distinctly Course XV flavor."

A Maytime comment may be in order to close these notes: "Golf is what men do to relax when they are too tired to mow the lawn."—**W. I. McNeil,** Secretary, 107 Wood Pond Road, West Hartford 7, Conn.; **C. D. Proctor,** Assistant Secretary, P.O. Box 336, Lincoln Park, N. J.

'18

All the golden manifestations of creative inspiration which flowed in such melodic streams from **Earl Collins'** pen way back when, have been reawakened by rumors of jottings in this column. From 1133 Hazelton Street, Eustis, Fla., he writes: "In a recent issue of The Review, I noticed a reference to your having resurrected the Tech Show, 'Getting Across.' This caused me to prick up my ears because I had some small part in the musical end. Also, I note that **Sherman MacGregor** commented on his having written the lyrics for at least one of my songs. I have often thought of him since those days when we had such elaborate shows to stage. Will you please tell me which issue carried your comments, and if possible give me Sherman's address." Earl got an answer to both questions, but left many unanswered ones concerning how things are with him.

With a fine urgency of feeling **Johnny Kilduff** called on the telephone, asking that I remind the brethren to confirm their reservations for the reunion. He also had words of praise for the manifestations of **Pete Sanger's** creative inspirations that have done so much toward planning the reunion. Dates: June 8 to 9. Place: the Wianno Club at Osterville on Cape Cod. You can express the vigor, the beauty, or the fragility of life there in ways varying from forking a horse, swinging a number five iron, watching the rhythmic repetition of the restless rolling ocean, or motivating a rocking chair on the wide veranda. Please send your confirmation to Alan B. (Pete) Sanger, 281 Garth Road, Scarsdale, N. Y. He made a lot of arrangements when he was not feeling well, and deserves our warm appreciation. Apparently there will be over 100 of us assembled, come June.—**F. Alexander Magoun,** Secretary, Jaffrey Center, N. H.

'19

Jim Reis writes that he maintains bachelor quarters at 350 S. Fuller Avenue, Apt. 11G, Los Angeles, Calif., and

would be glad to hear from any of the boys. He is away at present spending two months in Peru. . . . **Charles Chayne,** General Motors, Vice-president in charge of Engineering Staff, retired March 1, after more than 33 years with the corporation. He was originally associated with the Buick Motor Division. While he was in charge of that division, many new features were introduced, such as directional signal lamps, Dynaflow torque converter transmission, the hardtop coupe and heat absorbing glass. He was responsible for the start of an engine development program which led to the introduction of Buick's first V-8 engine. Since 1951 Mr. Chayne has been GM vice-president in charge of Engineering Staff. . . . We regretfully report the death of **Bernard S. Coleman** on February 15, 1963, and also of **Oscar J. Fulreader** on September 28, 1962. . . . The new address for **Herman A. Herzog** is 336 Farragut Street, Park Forest, Ill. . . . Your secretary is retiring from the Lummus Company in April, 1963, and has a part-time assignment as consultant with the Arthur D. Little Company, Inc., Cambridge. Will also continue to do some traveling.—**Eugene R. Smoley,** Secretary, 30 School Lane, Scarsdale, N.Y.

'20

Reference to **Chuck Reed**'s numerous travels in an earlier issue brought the following interesting and welcome comments from the noted traveler himself: "Having visited St. Croix in December, I have just returned (February 19) from another trip to the Caribbean. The fact is, and maybe **Homer Howes** would be interested, I made my third cruise on the ship "Meteor" to islands in the Caribbean, followed by a stay in St. Croix. The night before I checked out, I had the pleasure of a visit with Gordon Brown, '31, Dean of Engineering. At a dinner with friends who live on the island, **Ken Clark**'s name was mentioned and there were comments on the many pictures he had painted in St. Croix. My host also remarked that he had sold Ken his guest cottage shortly before Ken's death. Several people at the dinner party knew him and spoke most highly of his artistic abilities and his personality. It was plainly evident that they held him in high regard."

Howard Williams has been elected vice-president of the American Institute of Consulting Engineers. He is treasurer and a member of the board of directors of Fay, Spofford and Thorndike, Inc. He is a fellow of the American Society of Civil Engineers and a past president of its Northeastern Section. Howard is an avid skater and golfer, a member of the board of governors of the Skating Club of Boston and a member of the Brockton Country Club and the Kittansett Club in Marion. He lives at 14 Colby Road, Braintree, Mass. . . . **Phil Byrne** of 28 Canterbury Lane, Westfield, N. J., has retired from Esso Research and Engneering Company. According to his company he "leaves behind a legacy of technical and managerial skill that influenced the development of petroleum research and engineering. Developments and designs he contributed have gone on stream in many parts of the world." Phil taught at Notre Dame a couple of years before joining Esso to help organize their laboratories at Baton Rouge. He went on a special assignment in Germany and then became chief engineer at Hydro Engineering and Chemical Company at Bayway. After a three year hitch with Lago Oil and Transport Company's Aruba refinery, he returned to Esso where he served as assistant chief process engineer, associate chief engineer and manager of the former Esso Engineering Department. More recently he was appointed special assistant to management for operations analysis. During World War II, he served in Washington as assistant director of the Petroleum Administration for the Secretary of War's division of refining. Phil and Mrs. Byrne plan to visit Hong Kong in the near future on a round-the-world trip. Their daughter is a missionary in Hong Kong.

I wish I could share with you the excellent Polaroid pictures of our 40th Reunion sent me a few days ago by **Ernie Whitehead.** I might say that the best ones were those in which Ernie himself was in the picture—evidence that some other classmate could manipulate the camera better than Ernie. There are fine views of Lee Thomas, the Wason twins, Ned VanDeusen, George Burt, George DesMarais, Harry Kahn, Johnny Nash, Frank Badger, Bob Patterson, Pete Lavedan, George Dandrow, '22, Buzz Burroughs, Jim Parsons, '21, Skeets Brown and Count Dumas.—**Harold Bugbee,** Secretary, 21 Everell Road, Winchester, Mass.

'21

Portions of the "Preview of Alumni Day 1963," which the Alumni Association sent to honorary secretaries, predict how much will all enjoy the "inside story" on inertial navigation. Promised is a "distant early warning" to all engineers on the impact of the "man-computer" team, through demonstrations which electronically squeeze thousands of design days into minutes. We will see the world-renowned new magnet laboratory in action, as well as a display of satellite hardware which may some day be part of our houses in space. The Humanities Department will have us participating in their program for developing mentally well-rounded engineers and scientists—which they manage to complete successfully before Father Time does it physically. Also said to be scheduled are: (a) "A sit-in session with a group of undergraduates analyzing the work of a great poet," and (b) "Examples of remarkably fine paintings created under the Humanities program," but we are from Missouri re these choice tid-bits. The finale is "a classroom case study of how music appreciation (is) developed by analysis, using a piece that will be played that evening in Kresge Auditorium by the incomparable Arthur Fiedler and the Boston Pops Orchestra." We're all for Fiedler and the Pops and hope they won't have trouble in synthesizing what the boys pull apart during the day. Shades of Bullard, '87, and Hovey—not "The Stein Song!" . . . Despite all this byplay, you and your wife had better be there on Alumni Day. The Preview omits details, such as the date, but we predict that it will be Monday, June 10; that the Class of 1921 will have a fine get-together at the buffet luncheon in the Great Court (where we will hear our revered President Jay Stratton, '23, chat with the whole Alumni family on the current state of the Institute); that we'll all have a grand social hour on Briggs Field; and that 1921 will have its own family party during the excellent dinner in the Rockwell Cage, followed by the always enjoyable Pops concert. If you have missed the fun and fellowship by not attending a recent Alumni Day, we know you will be headed back for this one; if you've never tried a sample, start now and you will wonder why you didn't long ago! Write to the Alumni Office for reservations. Your secretaries will be glad to help in any way we can.

Dugald C. Jackson, Jr., Scientific Education Advisor at the Ballistic Research Laboratories of the Aberdeen Proving Ground and Chief of the Ballistics Institute, has been awarded the 1962 Zornig Award in recognition of his significant contributions to the laboratories' scientific program. The "Harford (Md.) Democrat" of January 17, 1963, says, in part: "Mr. Jackson, known to his associates as 'D. C.,' was honored at a special ceremony on January 11 before a gathering of friends and laboratory associates. Colonel Richard R. Entwhistle, the commanding officer, presented him with two framed certificates, a replica of the original Zornig Award and a U. S. Savings Bond. The award was established in 1959 by Colonel H. H. Zornig, who founded the Ballistic Research Laboratories. The award citation reads: 'For outstanding support of the research mission of the Ballistic Research Laboratories.' " . . . Dug received a bachelor of arts degree from Harvard and then obtained the bachelor and master of science degrees with us in Course VI-A. He later received a degree in electrical engineering from the University of Missouri. In World War I, he saw service in France and Belgium from 1917-19 as a second lieutenant in the Coast Artillery Corps. He entered the educational profession as an assistant professor of electrical engineering at Trinity College and at Duke University. He served as head of the Department of Engineering at the University of Louisville and later as head of the Department of Electrical Engineering at Kansas University. He then became director of Lewis Institute in Chicago and was an early proponent of its subsequent merger with Armour Institute of Technology to become the current Illinois Institute of Technology. In 1939, he was appointed dean of the School of Engineering at the University of Notre Dame. During World War II, he became a full colonel in the Army Ordnance Corps and

is now a colonel in the Army Reserve. He was awarded the Army Commendation Ribbon. He came to the Ballistic Research Laboratories in 1948. Dug is the author of a book on "The Profession of Engineering." His memberships include the Institute of Electrical and Electronics Engineers, the American Society of Mechanical Engineers, the American Society of Civil Engineers, the National Society of Professional Engineers and the Society for the Advancement of Management. A welcome letter from his home, Tetrastremma, Harmony Hills, RFD 1, Havre de Grace, Md., says: "What a year of delightful travels we have had." He and Betty observe their 45th wedding anniversary this year.

Just as surmised by **Herb DeStaebler** in his recent note for these columns, Madeline and **Rufe Shaw** have been gallivanting to many parts of the world. A brief message from Rufe, written in Athens, Greece, says: "We are homeward bound on a trip around the world which started last December 29. We have so far been to Hawaii (**Harry Field:** Please report. Cac), Fiji, New Zealand, New Caledonia, all of Australia, Singapore, Thailand, Burma, Pakistan, the Holy Land and Egypt." Hope to see this couple in the Hexalpha contingent on Alumni Day to hear about the rest of these extensive travels. Visitors to Shawnee Hall can expect to view a professional exhibit of color pictures of the trip. . . . Harry Field owes us a further report on his own services as the official representative of Technology at the formal inauguration ceremonies during March, attending the elevation of Thomas Hale Hamilton to the presidency of the University of Hawaii. Harry is an honorary secretary of the Institute and regional chairman of the Educational Council in Honolulu . . . **Samuel F. Chalfin** is now in Santurce, Puerto Rico, where he heads the Inter-American Branch of the American Machine and Foundry Company at 2204 Park Boulevard.

A note from **Sumner** and Betty **Hayward** during their visit to the Mardi Gras in New Orleans assures us they tried our recommended Ramos gin fizz, the rights to which, we learn, are now exclusively owned by the Roosevelt hostelry. The weather did not completely co-operate with this year's celebration, but they had a good time in a party which included their daughter, Priscilla, and Sumner's sister from the West Coast. Betty has sent us a humorous article from the Simmons Review, entitled "Simmons 60-Year 'Love Affair' with M.I.T.," which should be read in the complete version by Simmons wives in the class group. It recounts that, from the time Simmons shared classrooms in the old Rogers Building when welcomed at its founding in 1902 by President Pritchett, through the period of Professor Sedgwick's considerable aid as a Simmons corporation member, and the service of many M.I.T. teachers on the Simmons staff—the most distinguished being our beloved Jim Killian, '26—the two schools have developed a special rapport which continues on academic and social levels as a result of similar programs with professional interests. The Simmons Review undertook a survey to nail down the rumor that their graduates are married to a high percentage of Technology men. Answers from recently married alumnae revealed a percentage of 20 for the Institute; Harvard, 15; Boston University, 8; and Tufts, 5 per cent. One reply said: "We are not the Women's M.I.T., but I am certainly glad we are M.I.T.'s women!" Thanks to Betty and to our sister Review.

A fine personal letter from **Irving D. Jakobson** includes the news that **Arthur R. Gatewood** has been elected president of the American Bureau of Shipping in New York. Congratulations, Liz. . . . **Henri P. Junod,** Vice-president of Pickands Mather and Company, Cleveland, and a member of its executive committee, has been elected to the board of directors of the Interlake Iron Corporation of Cleveland. Harry is also president and a director of several coal and dock companies, vice-president and a director of Interlake Steamship Company and vice-president of Olga Coal Company. He is a director and member of the executive committees of the American Coal Sales and National Coal Associations, director of the Bituminous Coal Operators Association and a member of the American Iron and Steel Institute. . . . **Dave** and India **Woodbury** have loaned a large number of paintings done by his famous artist father, Charles H. Woodbury, '86, N. A., for an exhibition at the Pinetree Designs Gallery in Ogunquit, Maine. . . . **Harold H. Cake** is executive vice-president of the Equitable Savings and Loan Association, Portland, Ore. . . . Dr. **Attilio Canzanelli** is professor of physiology at the Tufts University School of Medicine, Boston. . . . **Merrill A. Youtz** serves as principal chemist in the Chemical Research Department of Battelle Memorial Institute, Columbus, Ohio. . . . **Herb** and Mildred **Kaufmann** are collectors and dealers in American antiques at Scotts Corners, Pound Ridge, N. Y. Herb retired several years ago as vice-president of Treitel Gratz Company, Inc., New York City, and retains his directorship in the New York and Honduras Rosario Mining Company. . . . **Robert R. Worsencroft** is professor of drawing at the University of Wisconsin, Madison, Wis. . . . **Ed Chilcott** heads his own firm, Technical Products Company, Inc., in Los Angeles, Calif. . . . **Chesterton S. Knight** is treasurer and general manager of George Knight and Company, Inc., Brockton, Mass., and a director of Knight Dies, Inc., of Lynn, Mass., and the National Bank of Plymouth County. . . . **John J. Winn, Jr.,** is general manager of the Port of Portland, Ore. . . . **Ivan C. Lawrence,** formerly vice-president and director of personnel administration, Minnesota Mining and Manufacturing Company, makes his retirement home in Twin Shores, Longboat Key, Fla., where he is president of the Twin Shores Camera Club. He also keeps active as a member of the Policy Committee of the National Industrial Conference Board and on the U. S. Civil Service Personnel Committee.

With deep sorrow, we record the passing on February 20, 1963, of **Willard Ames Fleming** of Cross Street, Medfield, Mass., and express to his family the sincere sympathy of the Class of 1921. Born in Somerville, Mass., on April 5, 1898, he prepared for Technology at Somerville High School. At the Institute, he was a member of the Masonic Club and the Civil Engineering Society. He was graduated in Course I. In World War I, he was in the Coast Artillery at Fort Monroe and attended Officers Training School, where he became a second lieutenant in the Coast Artillery Reserve Corps. . . . Action: Make reservations for your wife and yourself for Alumni Day, June 10, 1963. Write to your secretaries.—**Carole A. Clarke,** Secretary, c/o International Electric Corporation, Route 17 and Garden State Parkway, Paramus, N. J.; **Edwin T. Steffian,** Assistant Secretary, c/o Edwin T. Steffian and Associates, 376 Boylston Street, Boston 16, Mass.

'22

March in Buffalo has had only sunny, pleasant days, so you are invited here for a visit any time. The winter has been severe but with very little snow. When these notes are read, your secretary will be reporting at the M.I.T. Club of Japan and Hong Kong with hopes to join you all at the class reunion on Alumni Day in June. Make your reservations early. . . . **Thomas H. Gill,** of East Orange, N.J., retired on January 31 from Congoleum-Nairn as manager of purchases. He was cited for "his contribution to the welfare of C-N and for 40 years of loyal and effective service." Tom is a member of the National Association of Purchasing Agents and the Purchasing Agents Club of Trenton. . . . Kidder, Peabody and Company have announced the appointment as vice-president of **William H. Noyes.** He will be in charge of the private placement department after having been with the firm since 1944. . . . The Port Huron Times-Herald of Michigan has reported that **Alfred Wolf,** flyer and color photographer, has presented a new travel series on "Rural England." Al is a native of Germany and came to the United States long before attending the University of Wisconsin, the Institute, and European schools. He was an advanced flight instructor in the Navy and one of the early Navy aviators. Later he became an executive of one of the pioneer airlines. Mr. Wolf's travels have taken him to Europe many times, also to Asia, Africa, Canada, Mexico and Hawaii.

The following is a report from our Assistant Secretary **Oscar Horowitz,** dated February 17, 1963: "Our plane crossed 3,000 miles of the Atlantic Ocean in six hours. We spent two days in the delightful warm climate of Dakar, Senegal. Then we went to Accra, Ghana. We were paged at the Accra airport by Ghana's only M.I.T. Alumnus, Benjamin T. K. Adadevoh, '60, who drove 60 miles to greet us. He sends you his best regards and wants me to tell you that he hopes to return to M.I.T. for some graduate work (despite a wife and five children).

Since you wrote him that we would arrive on January 28, he was able to figure out the flight which would bring us to Accra. We found him to be a very cheerful person. He had arranged quite a program for us by the government public relations department. However, time prevented us from following this program. Ghana is very hot and humid, yet the people move around peppily. Accra has an air of industrial bustle. The university there has a fine physical plant. From Accra, we moved on to Johannesburg, South Africa. Johannesburg has a very nice climate. The people there are most hospitable. We were invited out to dinner on nine of the ten nights we spent there. I spoke and showed my movies to a meeting of 17 movie clubs. I had managed to include 'The Social Beaver' in my luggage and had a showing of it for alumni and their wives. The meeting was held in a friend's home and was most enjoyable. Among alumni attending were **Max S. Salomon,** Julian Beinart, '56, Dr. Maurice A. Cooper, '32, Wolfgang M. Kloenne, '33, Charles A. Rigby, '46, Abraham P. K. Steyn, '49, Leo Weinberg, '20, and Leonidas M. Kioilos '34. We hope again to greet the M.I.T. Alumni in Bombay, India, after which I hope that we will be able to show 'The Social Beaver' to the Singapore Alumni."—**Whitworth Ferguson,** Secretary, 333 Ellicott Street, Buffalo 3, N.Y.; **Oscar Horovitz,** Assistant Secretary, 33 Island Street, Boston 19, Mass.

'23

Next month many of your classmates will gather at the Chatham Bars Inn for our 40th Class Reunion and then attend the Alumni Day festivities at the Institute. It is still not too late for you to decide to be with us. Our classmate and M.I.T. President, **Julius Stratton,** returned recently from a very rewarding trip to Asia and Africa to look at M.I.T. in perspective from abroad . . . Dean **Burchard** was the guest speaker at the luncheon following the inauguration of Albert Bush-Brown as president of the Rhode Island School of Design on March 23. . . . **Bertrand A. McKittrick** has been elected a director of the Union National Bank of Lowell, Mass. Bert is a very busy man as he is also president of the F. and M. Real Estate Company, Lowell, Sabal Palm Apartments, Inc., Miami, Fla., and Rollstone Investments, Inc., Lowell. He is a trustee of the Wyman's Exchange Associates, Lowell. He also is chairman of the board and a director of the Faulkner Textile Associates, Lowell, North Billerica Company, (Faulkner Mills), North Billerica, and Tilton, Inc., Boston. He is a director of the Russell Manufacturing Company, Middletown Conn., Stone Investments, Inc., and Lowell Mutual Fire Insurance Company, both of Lowell. He is a trustee of the Central Savings Bank, Lowell, Lowell General Hospital (member of executive committee). Lowell YMCA; and a corporator of the Lowell Five Cent Savings Bank.

A letter from Robert C. Read, '25, contained the sad news of the passing of **Walton T. Davis** on December 21 of a heart attack. Quoting from his letter: "Walt was born in Oxford, Nova Scotia, served with the kilt-swinging Nova Scotia Highlanders in World War I, took his first two years of engineering at Mount Allison University in Canada, and transferred to M.I.T. in the autumn of 1921. He spent most of his life (with the exception of World War II years, when he was a full colonel in the Chemical Warfare Division) in the oil business, having been president of Aetna Oil Company, and a director and vice-president of Ashland Oil at the time of his death. He was a brilliant engineer, world traveler, an ardent sportsman and a genial host to a wide group of his friends to whom his beautiful blue-grass estate was headquarters whenever they came close to Lexington, Ky. He is survived by one sister, Miss Winifred Davis of Toronto. His will provided for the equal division of a million-dollar-plus residual bequest between Mount Allison University and M.I.T."

The Kennedy Award was given to **Ivan L. Tyler,** research counselor, Research and Development Laboratories, Portland Cement Association, Skokie, Ill., "for more than 25 years of conscientious service as chairman or member of a number of Institute technical committees which significantly contributed to the knowledge of concrete as a material." The Kennedy Award, in the form of a framed scroll, was established in 1958 by ACI in memory of the late Henry L. Kennedy, a past president of the Institute. An ACI member since 1935, Mr. Tyler has been active on many Institute committees, including the Technical Activities Committee, and presently is serving on the following committees: Nomenclature, Mass Concrete, Recommended Practice for Concrete Mixes, Aggregates, and Inspection of Concrete. He chairmanned the Aggregates Committee in 1952 and the Mass Concrete Committee in 1956-57, and has contributed numerous papers to the ACI Journal. Mr. Tyler has been with the PCA since 1940 as research engineer, manager of the Field Research Section, and now as research counselor. His work has been concerned mainly with the performance of concrete structures and long-range investigations, including supervision of PCA's Long-Time Study of Cement Performance in Concrete. Mr. Tyler accumulated considerable experience on hydroelectric construction during the period from 1923 to 1939. This work, which formed the basis of several important papers on dam construction, included responsibility for materials testing, inspection, and mix proportioning on hydroelectric projects of the Southern California Edison Company, the Phoenix Utility Company, the City of Pasadena, California, and the Tennessee Valley Authority. As materials engineer with the TVA in 1934-39, he was in charge of inspection, concrete laboratories and technical phases of construction for the Norris, Chickamauga and Hiwassee Dams and an adviser on construction of the Guntersville Dam. In 1939 he was appointed concrete and materials engineer for the Pennsylvania Turnpike Commission, serving two years in that capacity before joining the research staff of the Portland Cement Association. In addition to his ACI affiliation he is a member of several other professional societies including the American Society of Civil Engineers and the American Society for Testing and Materials.

Henry Flynn has been elected vice-president of Texaco, Inc. He joined Texaco in 1927 as a power engineer in New York, and served in the Power Department at the Port Arthur refinery from 1928 to 1943, when he was transferred to the Manufacturing Department. He became superintendent in 1953, general superintendent in 1956 and plant manager in 1958. In 1960, he was made general manager of the Domestic Refining Department. . . . A note from **Jack Cochrane** reads: "I'm retired since December, 1959, and am having the time of my life down here eight months sailing, playing golf and being commodore of the Royal Palm Yacht Club at Fort Myers. The other four months in northwestern Indiana give us a chance to enjoy visits of our son and daughters' families, and to get away from the heat, humidity and bugs of the southern climes. Don't report me to the Chamber of Commerce, please!" . . . A note from **Tom Drew's** wife, Alice, indicates that Tom spent some time in India on business this spring. . . . Only one address change this month, namely: **Herbert C. Ludeke,** 164 South 8th Avenue, Naples, Fla.—**Herbert L. Hayden,** Secretary. E. I. duPont de Nemours and Company, Leominster, Mas.; **Albert S. Redway,** Assistant Secretary, 17 Old Orchard Road, North Haven, Conn.

'24

Your secretary had just pulled out the folder of notes and gossip to prepare this monthly communique, when news itself popped in the door in the person of **Jack Hennessy.** He had come up to check on some of the work he's doing on campus. His firm, Syska and Hennessy, is doing the mechanical engineering on both the 20-story Earth Sciences Center and the Women's Dormitory. They also have a job across the river that's taking a bit of doing, the 52-story Prudential Center. Jack says their work in the Boston area is 10 to 15 per cent of their business. By that you may judge it's a busy office. And as if this were not enough, he is also a member of an outfit that makes appreciable claims on his time, the New York Board of Education. Not all of us are slowing up. . . . This June the Institute is to have a distinguished visitor, the Bishop of North Borneo. After 39 years **Jimmy Wong** is coming back to the scene of his student days. He will be touring the states in June and July, preaching in churches and addressing meetings on missionary work, then go on to Toronto in August for the Anglican Congress. While there Trinity College will confer the degree of Doctor of Divinity on him. Imagine a D.D. in our class! The Wongs have three sons and a daughter, the latter living with them in Jesselton, North

Borneo. All the sons have engineering degrees. Francis is an engineer surveyor with Lloyds in London; Lawrence is assistant superintendent engineer with Mansfield and Co., Ltd., in Singapore; and David is a lecturer in electrical engineering at the University of Sydney, Australia. . . . Another, though quite different, academic distinction came to **Walter Weeks** in April. Colgate University inaugurated a new president on the 19th, and Walter, in gay regalia, marched in the procession as the official representative of M.I.T.

The anticipated annual greeting "from sunny, warm Florida" has arrived from the **Henningers,** although a bit later than usual this year. "Come on out of Eskimo land and join us here, you-all," says Marianne. . . . Others have gone farther afield. **Pret Littlefield** writes: "On March 1 **Nish** and Luisa **Cornish** were our guests at a cocktail party in the Reforma Hotel in Mexico City. Peg and I came home the next day after doing many places including Taxco, Acapulco, and Puerta Vallarta, with all kinds of red carpet treatment and a conspiracy to keep me awake. Only on my fifth visit will I be able to adjust to the hours practiced in Mexico." . . . The **Lehrers** solve the adjusting problem by never staying in one place long enough to have to adjust. Their whirlwind tour of South America started at El Panama Hilton. They watched the canal being dredged, flew over to the San Blas Islands for a look at the Indians, had a fling in the casino, then took off for Bogota. Here they visited the Gold Museum, appropriately located in a huge vault in a bank, and a salt mine which goes back beyond 300 B.C. With five hills of solid rock salt, they're still working the first one. They drove into the mine some three miles to a parking area, then went into a cathedral carved out of the salt with a seating capacity of 8,000. Next came Quito and the market at Ibarra which they reached over a cobblestone road laid by women, part of the Pan American highway. Then on to Lima where they entrained for the Inca ruins of Machu-Picchu, most impressive even in drenching rain. . . . The Lehrers were not overly impressed with Santiago, but then they went on to the very south of Chile and crossed the Andes by boat! Actually it was several boats on different lakes, but it's still a bit novel. They ended up at Lake Nahuel Huapi in Argentina "which is very much like Banff and Jasper Park only more amazing."

Cliff Bailey who has been general manager of DuPont's plant in Beaumont, Texas, for some years, retired on March 31. He was honored at a little retirement dinner at which 800 guests were present. Cliff told your secretary some time ago: "I'm basically very lazy, but I've never had an opportunity to indulge it." Now that he has the time it still doesn't look as though he'd made it. He is chairman of Beaumont's United Appeals this year and is involved in several other important civic projects.

These notes had just been completed when we had the shocking news that our president, **Blaylock Atherton,** had died. He had suffered from high blood pressure for some time, and a heart attack on March 17 was fatal. Blay came to M.I.T. from Dartmouth and was with us the entire four years. He was on the staff for a short while as an assistant in economics, then started his own insurance business in Nashua, N.H., in 1926 which he continued to head until his death. For many years he had been active in political affairs, first as a member of the N.H. House of Representatives, then the Senate. He was president of the Senate under Governor Sherman Adams, and when Adams became Eisenhower's campaign manager, Blay became acting governor for the remainder of his term. He held many high Masonic offices and had received many honors. At our 35th Reunion we elected Blay president of our class. Blay is survived by his wife, known to many of us during student days as Kay Bremner, and three daughters, Nancy, Janet, and Deborah. His passing is a great loss to the class, and a real personal loss to many of us who had counted him a good friend and companion for more than 40 years. He will be sorely missed. The sympathy of the entire class goes to Kay and the girls.—**Henry B. Kane,** Secretary, Room 1-272, M.I.T., Cambridge 39, Mass.

'25

While most of us were concentrating on a bachelor's degree back in 1925, **Thomas R. Camp** was working toward his master's degree in civil engineering, which he obtained with our class. For a number of years, he was on the faculty of our Civil Engineering Department, concentrating in the field of sanitary engineering; and for the past several years, he has been the senior partner in the firm of Camp, Dresser and McKee. The Engineering Societies of New England, at the recent Engineers' Week Luncheon, announced that Tom Camp is this year's recipient of the New England Award which is presented each year to an engineer in New England who has made outstanding contribution to his profession. Tom is noted for his original contributions, research, and inventions in the fields of water and sewage treatment. The following is a quote from the Journal of the Engineering Societies of New England, which shows the high regard this Society has for Tom Camp: "He is the author of more than one hundred technical and scientific papers, which have resulted in numerous national honors and awards. Locally, many engineers are grateful to him for donating his time to giving helpful lectures at seminars at the Boston Society of Civil Engineers and for his vigorous participation in engineering society work. He has been president of the Boston Society of Civil Engineers, New England Water Works Association and New England Water Pollution Control Association. Most importantly, he deserves this recognition for his continuing and unsparing efforts to aid his fellow engineer, and particularly to advance the profession of sanitary engineering. He is one of the founders and is a former chairman of the American Sanitary Engineering Intersociety Board. This is the first engineering certification board to afford recognition to specialties in engineering along the same professional standards as the various boards of specialty in medicine and surgery. It is by such means as these, and the result of the efforts of such men, that engineering is beginning to assume its rightful standing as a learned profession." I am sure the entire Class of 1925 joins me in offering Tom congratulations!

About 800 M.I.T. Alumni are serving the Institute in a very enjoyable manner and providing a most important service to M.I.T. in the role of Educational Counsellors. Included in this large group of Alumni are the names of those who are participating in this important program: **Gates W. Burrows,** Santa Ana, Calif.; **Ben Oxnard,** Denver, Colo.; **Charles Cooper,** Newark, Del., Regional Chairman of the Wilmington Area; **Bed Groenewold,** Sarasota, Fla.; **William Wheeler,** New York City; **Charles Billman,** Dayton, Ohio; **Richard Tom Price,** Regional Chairman, Erie Pa.; **Henry Hoar,** Pittsburgh, Pa.; **Gil Delugach,** Regional Chairman, Memphis, Tenn.; **Ed Harris,** Regional Chairman, Lynchburg, Va.; **Arthur Hall,** Wauwatosa, Wis.; and **Agustin M. Valdes,** Mexico City. Having served as an Educational Counsellor while living outside of the Cambridge area, I can assure you it is a most rewarding experience; and if you are ever asked by the president of M.I.T. to serve in this capacity, take my advice and accept the opportunity. . . . Just as this is going to press, word has arrived of the death of **Theodore Milne** in New York City on November 20, 1962. No details are available.—**F. L. Foster,** Secretary, Room 5-105, M.I.T., Cambridge 39, Mass.

'26

This morning one of our salesmen described one of his unearned successes to me with the remark that "every now and then a blind pig digs up an acorn." I didn't think I would be able to use it so soon but that's what happened to me this month with the notes. I am pressed for time to write them since I am leaving on the 8 A.M. jet to Philadelphia, but good old **Bill Meehan** came to the rescue with a letter started in Acapulco and finished in Oaxaca, Mexico. With such a windfall I need only supply the quotation marks for our guest writer of class notes this month.

"Dear George, When I saw you in town a month or so ago I told you that I intended writing a letter for the Class News, dwelling on the beauties of Cape Cod as an off-set to your fascinating observations on Pigeon Cove. Since Thoreau has already done the job much better than I possibly could, that project is now abandoned and instead I will substitute this note as I promised you from Mexico. Last year by chance I ran across **Al Gass** in the course of business in western Massachusetts. He very kindly ex-

tended an invitation to his home in Greenfield when he learned that I was planning a trip to Mexico. Al and his charming wife, Elizabeth, have been spending a large part of their winters in Mexico for some years and I took advantage of his invitation to visit their beautiful old home in Greenfield where I met his son and daughter and their respective spouses as well as one of the grandchildren. I was interested to hear of another son, not present, who is now in Canada working in Soil Engineering who had done graduate study at M.I.T. and contributed five more grandchildren to the Gass dynasty. (Coincidentally, my own son, Richard, concluded his own studies in the same field at M.I.T. in 1961 and became the father of our first grandchild a few months ago.) The Gasses have become quite expert in the history of Mexico and have a particular interest in the early civilization of the various Indians, and I enjoyed a delightful evening while they showed slides, most particularly of Oaxaca where they planned on spending some time this winter. At this moment my wife and I are waiting for the car to take us to the Acapulco airport for our flight to Oaxaca where we may possibly meet the Gasses, again by chance and not by definite plan. We are leaving now and will resume after we arrive at Oaxaca.

"Oaxaca, March 5: We arrived on schedule via Vega Airlines which consists of one DC-3 owned and piloted by the same person, which operates three times a week between Acapulco and Oaxaca. Sure enough, ran across Al and Elizabeth Gass who had recently returned here from a several days trip to the southwest coast near San Blas. We had cocktails and then dinner at Oaxaca Courts, a beautiful, small motel where they are staying. The following day we met again at the sidewalk cafe at the Marquis del Valleo Hotel which is the 'despocho' and meeting place of the city, fronting on the Zocola—the center of activities of all Mexican towns. Here we met several Americans, some of whom have retired here to enjoy the eternally pleasant weather of continuous sunshine, combined with the coolness of the 5,000-foot altitude. Yesterday we visited the ruins at Monte Alban, some of them 2,800 years old and built by the Zopotec Indians and other tribes whose descendants still live here after many waves of immigration and conquests by other tribes and finally the Spaniards. One cannot help reflect upon what might be the appearance of our own country some three millennia hence. The archeologists here have a fertile field with literally thousands of unexplored monuments and graves, and the debates are far from concluded as to the origin, the races and cultures of the people here. I forgot to mention earlier that when we arrived at our hotel in Mexico City some 12 days ago, at about 11 P.M., who should we see at the door but my son, Richard, who had been touring Mexico with his wife since he completed his military service with the Army Engineers at Belvoir, Va. We spent a day and evening with him on the town whence he departed the following day for California. This has been a rambling, incoherent note, but probably represents the mental attitude induced by a relaxing and interesting trip far away from business worries and pressures. Sorry you missed your previously planned trip and hope to see you soon at Schraffts. Bill Meehan."

I also received a note from **Dave Shepard**'s wife telling of their transfer to Europe which again I quote: "Dear George, David is to be transferred abroad. We shall live in London for 'about two years.' This is a real bouleversement as to policy of the company and for the Shepards. We leave with much regret just when Berney, Lee and children have moved from Mexico and we have lived in our beautiful new home for only about two years. The development of the land around our home will have to wait. Who will keep back the wild grape, bittersweet, honeysuckle? Who wants to adopt our corgis? And what about those Saturday morning trips to the hardware store? Who will feed the birds in winter? Others will catch the trout in that Connecticut stream. We loved our life in England pre and post war so much. But 'you can't go home again.' In those days we had a home in the country, children in school; we felt we were a part of it all. But now we shall live more 'sur la branche.' There will be many compensations. First among these are our friends on the other side. Then we have never chosen to live in a big city; we shall probably love it. We shall probably have to travel a lot—possibly so much so that when we return I may not want to go much beyond our Connecticut-New York border which runs through our land. There should be time to study—for me at least. There will be much of interest, must to enjoy. We hope to have our annual Colorado vacation. We expect to leave in late February, make a preparatory, brief visit to London and have a few days of skiing in Arosa. We shall return to New York in March for several weeks when I shall arrange for any shipment of lares and penates. Where or how we shall live in London remains to be determined. We may always be reached at Standard Oil Company (New Jersey) 29th Floor, 30 Rockefeller Plaza, New York 20, N.Y. and 50, Stratton Street, London, W. 1. Sincerely, Kay Shepard."

A more detailed news release came along later from Standard Oil Co. (New Jersey) which says in part: "M. J. Rathbone, President of Standard Oil Company (New Jersey) announced today that David A. Shepard, a director and executive vice-president of the company, would, until further notice, make his office in London. Mr. Shepard will guide on behalf of the board of directors of Jersey Standard, the co-ordination of policies for the various interests of the company in Great Britain, the Common Market, and other countries of Western Europe, and in the Middle East. Mr. Shepard has had wide experience with Jersey Standard's domestic and foreign affiliates. After serving as research engineer with what is now the Southeast Esso Region of Humble Oil & Refining Company, he was engaged until 1934 with oil hydrogenation and product application problems with Esso Research and Engineering Company, Jersey's principal research affiliate. Transferred to France and, two years later, to London, Mr. Shepard was a European representative of the research organization. In 1940 he became a technical advisor on foreign sales for the parent company. During 1942-43, Mr. Shepard was petroleum attaché for the United States State Department at the U.S. Embassy in London. In 1943 he was appointed a shareholders' representative for Jersey Standard in the United Kingdom, and in 1945 was elected chairman of the board of the Anglo-American Oil Company, now Esso Petroleum Company, Ltd. Returning to the United States in 1949, Mr. Shepard became executive assistant to Eugene Holman, who was then president of Jersey Standard. He served as Mr. Holman's assistant until elected a member of the board of directors in 1951. In January, 1959, he was elected an executive vice-president of the company and a member of the executive committee. In addition to being a trustee and member of the executive committee of the New York Public Library, with which he has been associated since joining the citizens advisory committee in 1951, Mr. Shepard is a member of the governing body of his alma mater, Massachusetts Institute of Technology. He was chairman of the Greater New York Fund's annual campaign in 1954. He also is a trustee of Rand Corporation, a non-profit organization engaged in scientific research, and of the Carnegie Corporation of New York, which was founded in 1911 for the advancement of knowledge and understanding among the peoples of the United States and the British Commonwealth." The Class of '26 obviously has usurped more than our allotment of space this month but we have never had a complete story in the notes about Class President Dave, and when some historian is picking through these old Technology Reviews a hundred years from now it may interest him to read this. Of course, I hope it interests you too! So cheerio until June when I hope to see many of you at Alumni Day.—**George W. Smith,** Secretary, E. I. duPont de Nemours and Company, 140 Federal Street, Boston, Mass.

'27

Mark Robbins, II, has been in the light manufacturing business in Attleboro, making parts for the electrical and electronics industries. He has written in the following concerning his recent move to Weston, Vt.: "Yes, I'm retired, quite unexpectedly and suddenly. I had a heart attack July, 1961, and after a hospital 'vacation' came up to Weston for a couple of months to rest up and then back to work, but a second attack in October set me back. I've always dreaded the thought of retiring but having it pushed on me and a good place to retire to, I've found 'spending time pleasantly' isn't so bad. I lead a quiet, relaxed life in a town of 400 and I'm sometimes called the senior member of the Weston sports

car club. A complete change of outlook on life makes it more pleasant. It's time that more of our class are giving thought to what's left for us." There are provocative thoughts in this letter and it highlights the point that in the next five or ten years most of us will face compulsory retirement or possibly some kind of voluntary "reorientation." Would it be possible for the early retirees to express some opinions, relate some experiences that would help those who are only contemplating a change? Former President Eisenhower is quoted as saying that even the thought of retirement to him was "terrifying." Just as a start, how about a count of retirements and reorientations in the class? Those of us who are retired are (theoretically) less rushed and you could give me your name for the Retirement and Reorientation Roster, and we can add up the total from time to time.

The following has just been received from **Howard H. Burt,** I, whose address is Box 1164, Chapel Hill, N. C.: "We have been every place but Chapel Hill since leaving Youngstown, but now we are indeed settled here for the predictable future. After 35 years as plant engineer for General Fireproofing Company, makers of metal office furniture, I retired to this beautiful college town. I am surprised to find that quite a number of northerners have done this over the years, and I find myself approving their judgment in doing so." . . . **Bob deLuccia,** I, Vice-president and chief engineer of Pacific Power and Light Company, has received the 1962 Engineer of the Year Award of the Professional Engineers of Oregon, in recognition of "contributions to the advancement of engineering and his services to the community and professional organizations." Bob has been active, too, in M.I.T. affairs. . . . **Frank Marcucella,** I, has been elected a member of the board of directors of the Lawrence Memorial Hospital in Medford. . . . Miles Laboratories, Inc., has named **Albert C. Buffum,** X-A, director of manufacturing. He joined Miles in 1951. . . . **Clarence Wynd,** X-A, has been appointed to Eastman Kodak's executive committee.

The following new addresses have been recently received: **Harry V. Aiavian,** I, 166 East 63rd Street, New York 21; **Manuel R. Castellanos, II,** 15-26 Abbott Road, Fair Lawn, N. J.; **Anthony C. De Napoli,** VI, 2 Otis Avenue, Cohasset, Mass.; **Marcus P. Robbins** II, Weston, Vt. . . . Whenever a change of address notice from the Institute involves a move from one part of the country to another, I write to find out what happened. A check of the past few years indicates that 40 per cent send back some news for the classnotes.—**J. S. Harris,** Secretary, Masons Island, Mystic, Conn.

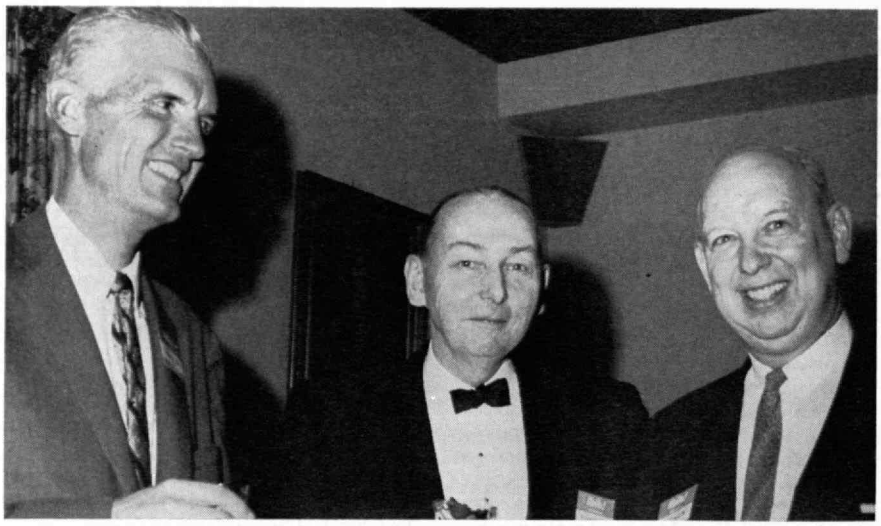
'28

As you are reading these notes, our big 35-year reunion at the Wychmere Harbor Club, Harwichport, Mass., on old Cape Cod, will be only a few days off! It promises to be the best party ever! There has been a most enthusiastic response, and we are well assured that the hotel accommodations will be comfortably filled. Don't let this chance slip by. Shake off your cares and enjoy a wonderful weekend with your old classmates! Most of the wives are coming, too, and a good number of '28 sons and daughters. . . . **Lazare Gelin** scratched a note on the back of his reservation card stating that he was about to leave for Japan. He will return to the U.S. via the Middle East and Europe and be back in time for the reunion. . . . **Bob Larson** sent **Jim Donovan** a report on his activities. Bob has just retired after 20 years of service with his company, McKiernan-Terry. He has served his community in the various offices of health commissioner, police commissioner, vice-mayor, mayor, and as a staunch supporter of the local 'Y' day camps. . . . **Jay Monier** also sent in a very nice letter to Jim. Jay is completing his 30th year with DuPont after filling assignments in various parts of the country. His posts have included that of assistant manager of the Savannah River Plant, which DuPont operates for the U.S. Atomic Energy Commission. . . . **W. Bion Moore** sent in a resume of his professional work. It is very full and impressive. We will give you a report on this in a later set of notes. At present, Bion is staff engineer, System Planning and Analytical Division, American Electric Power Service Corporation, where he is in charge of a power requirements research program for an electricity system producing over 34 billion KWH annually. . . . Other notes were received from **Tom Harvey** and **Hal Porter.** . . . Two newsy letters were received from classmates who will be unable to attend. These were **Charles Richheimer** and **Maxwell Parshall,** and here again, for lack of space, we will report more fully in a later issue of these notes.

A news item in the 'Berkshire Eagle,' Pittsfield, Mass., for January 23, 1963, carried a portrait photoprint and news item of **Nathaniel Herbits.** Nate was named man of the year at the annual meeting of Temple Anshe Amonim, both for his services to his temple and to his community. In the course of his many activities, he has served as vice-chairman of the United Community Services, as a member of the Pittsfield Traffic Commission, and twice as chairman of the United Jewish Appeal. Nate studied at Boston Law School after M.I.T. and is a member of the Berkshire Bar Association. He operates his own insurance and travel agency business. . . . **Harold Tingey** has retired from his position as research scientist at the United States Rubber Company, Research Center, Wayne, N. J., after 33 years of service. His early work with the company was in research and development. In the past 10 years he was engaged in patent liaison work with the company's patent and information service department. He was honored at a dinner attended by many of his friends and associates. . . . A press release received from the U.S. Department of Commerce and dated February 14, 1963, announced **Edward H. Holmes** as the recipient of the Department of Commerce Exceptional Service Gold Medal Award. The presentation was made by Secretary of Commerce Luther H. Hodges. This was in recognition of "rare and outstanding contributions in the furtherance of the Federal-aid highway program through advancement of new concepts and the acceptance of those concepts for co-operative highway planning by the state highway departments—and through them with local governmental agencies . . . and the Federal government; for major contributions to the technology of highway. planning and highway research." Ed has been with the Department's Bureau of Public Roads for 35 years, ever since graduation. . . . We regret to report the death of **Teunis Schenck,** Course VI, on August 2, 1962. —**Walter J. Smith,** Assistant Secretary, 15 Acorn Park, Cambridge, Mass.; **George I. Chatfield,** Secretary, 170 Pritchard Street, Fitchburg, Mass.

'30

At this time of year (February) the perennial paucity of news is partially palliated by the TAPPI convention, which usually attracts a number of our out-of-town classmates to New York. **Ralph Peters, Howie Gardner** and **Tony Savina** attended this year's meetings. Ralph stopped in at the office for a brief chat during the course of which a number of items of interest were touched on. The Peters have recently finished building, at the address listed below, a new home which sounds most attractive. Their two sons are married and have presented them with three grandchildren. Ralph, Jr. (M.I.T. '55) is with McKinsey and Co., a leading management consultant firm in New York. Their younger son, after graduating from Princeton and studying business administration at the University of Virginia, has set up his own business selling foreign cars in Syracuse. . . . Howie and Teddy Gardner stayed overnight with us and we had a fine talkfest. As many of you know, Howie is now at the Institute of Paper Chemistry in Appleton, Wis., where he is chief of the engineering and technology section. His job involves both teaching and research administration. The Gardner daughters remained in California; as Howie points out, home left the children in this case. Ellie is married, living in Berkeley, and has a son Mark. Carol graduated from Stanford and is now studying creative writing at San Francisco State College. Much of the evening was spent discussing points of interest in San Francisco and environs where your secretary and wife are planning to vacation this spring. . . . As of August, 1962, **'Sig' Linderoth** became director of engineering of Battle Creek Packaging Machines, Inc., where he is reorganizing and expanding the production design and R and D staff. He hopes, with the co-operation of a new marketing director, "to bring out new lines of equipment in packaging machines and related machinery." He is an active member of the ASME Machine Design and Research Planning Committees. The Linderoth's older daughter, Janet, graduated from Middlebury



THREE PAST presidents of the Rochester Club (left to right), Richard M. Wilson, '30, Dwight VandeVate, '22, and E. Philip Kron, '34, were present on March 13 at a dinner and reception held there in honor of President Stratton.

with a B.S. in biology. She is now studying for an M.S. and teaching at Purdue. Daughter Marilyn is studying piano at Roosevelt University in Chicago. Last September she was married to Bruce Stebbins, who is majoring in English at Roosevelt.

Pete Lovejoy is president of Lovejoy Construction Company in Des Moines. He has two sons, the older of whom is currently an applicant for admission to M.I.T. next fall. . . . Readers of the February 27 issue of the Wall Street Journal will perhaps have noted a sizable Cooper-Bessemer "ad" featuring a picture of **Willard Morain (Mouradian)** inspecting a low temperature test loop in the C-B cryogenics laboratory. He is a cryogenics development engineer with C-B. . . . Apparently the reference to **Bob Lytle's** activities in the February Notes was in error. A direct report from Bob indicates that he is currently with Rust Engineering Company in Pittsburgh. Bob, Jr. graduated from M.I.T. in '62 and is presently working for Eastman Kodak and taking graduate courses in business at University of Rochester. Bob's daughter, Mary, graduated from Penn State in '58 and is married to Robert Stokes, a lawyer and mayor of Clairton, Pa. The Stokeses have a son, also named Robert. . . . **Tom MacLaren** is general sales manager of Brown and Sharpe Manufacturing Company in Providence. His son Grant is at the University of South Illinois and daughter Sandra attends Pembroke College. Sandra is married and has a daughter Hope. . . . Changes of address: **Harry J. Fekas,** P. O. Box 425, Curundu, Canal Zone; Dr. **Edwin V. Hill,** Ledgetree Road, Medford, Mass.; **Sig Linderoth,** 151 Honey Lane, Battle Creek, Mich.; **Gerard E. McHugh,** 58 Emerson Road, Winthrop 52, Mass.; **Hermon H. Scott,** Grasshopper Lane, Lincoln, Mass.—**Gordon K. Lister,** Secretary, 530 Fifth Avenue, New York, 36, N. Y.; **Ralph W. Peters,** Assistant Secretary, 68 Village Lane, Rochester 10, N. Y.; **Louise Hall,** Assistant Secretary, Box 6636, College Station, Durham, North Carolina.

'31

An article in the January 18 issue of Time Magazine entitled "Puerto Rico's Brother Act" told of **Herman Ferré** and his brothers' activities in Puerto Rico. They've built a complex of seven companies into Puerto Rico's biggest private business. The article goes on to say "Today the Ferrés make 90 per cent of the island's cement, nearly all of its bottles and most of its tile and paperboard. They also fabricate steel, make sugar-milling equipment, and are partners with Pan Am in the jazzy new El Ponce Intercontinental Hotel." Speaking of Herman, the article says, "The production expert is Herman, 53, a quiet sort who majored in civil engineering at M.I.T.". . . . **Dick Kropf** has been selected by ASTM Committee D-13 as the recipient of the Harold DeWitt Smith Memorial Medal for outstanding accomplishment in the development and application of fundamental knowledge of textile fibers. . . . **Jim Fisk,** President of Bell Labs, has been chosen to receive the 1963 Industrial Research Institute Medal for "outstanding accomplishment in or management of industrial research which contributes broadly to the development of industry or the public welfare."

Irwin Lord, who is Vice-president of Tubbs Cordage Company, has been appointed to its Board of Directors. . . . And an announcement from Revere Copper and Brass, Inc., tells of **Leland Gibbs'** appointment as manager technical service in Research and Development Center. . . . An article in the Boston Herald indicates that **George Bunker,** Chairman of the Martin Company, is branching out and has bought a part interest in the Washington baseball club. . . . With sorrow, I report the death of Commander **Philip Allen, Jr.,** pioneer Navy flier and glider pilot and a former commander of the Charlestown Naval Air Station. He had retired from the Navy and died unexpectedly in Media, Pa., on January 20. . . . New addresses reported since your last Class News are: **George T. Bevan** 4428 Peach Street, Erie, Pa., **Irving Dubin,** 3002 Bedford Avenue, Brooklyn 10, N.Y., and **Samuel G. Ryan,** 14-2nd Street, New Dorp, Staten Island 6, N.Y. —**Edwin S. Worden,** Secretary, 35 Minute Man Hill, Westport, Conn.; **Gordon Speedie,** Assistant Secretary, 90 Falmouth Road, Arlington 74, Mass.

'32

The news notes on promotions, appointments, and new activities this month contain such fascinating sidelight information on the class members spotlighted that it is distressing to have to reduce them to manageable size. The blossoming of a new column in the St. Louis Globe-Democrat reveals the writing career of Major General **Thomas A. Lane,** who retired this year from the Army Corps of Engineers, Over the last 15 years General Lane has contributed dozens of thoughtful pieces to professional military and other serious publications, under his own name and under his pen name 'Shillelagh.' He has made a reputation as a broadgauge military leader whose interests were not limited to technical combat questions, but ranged over the entire complex field of national security and international affairs. Also a graduate of West Point and the National War College, he has taught at West Point and the Air Force Command and Staff School. After moving his household some 15 times as a military officer, he has now settled with his wife and two children in suburban Fairfax County, Va. Daughter Ann graduated last June from St. Louis University, and son Thomas C. will complete high school in June and is looking toward law or West Point.

Dr. **F. Rolf Morral,** who has been named to the Inter-American Relations Committee of the American Society for Metals, is senior research advisor of the Battelle Memorial Institute, Columbus, Ohio, and director of its Cobalt Information Center. He has studied in Spain and Sweden, received his Ph.D. at Purdue University, is the author of over 70 technical papers and collaborated on a book on metallurgy in Spanish. American metallurgy probably dates back to Father Jose de Acosta in 1590 and the earliest mining and metallurgical educational schools were those of the Spanish in what is now Mexico. . . . **William J. Hallahan,** of Beverly, Mass., has been designated an associate of the firm of Fay, Spofford and Thorndike, Inc. Engineers, in Boston. His specialty is the co-ordination of large and complicated projects such as the conversion of Goose Bay Air Base, Labrador, for modern military aircraft, and the Bomarc Missile facility at Dow Air Force Base, Bangor, Maine. On active military duty from 1940 to 1946 he was in charge of construction of large projects as lieutenant colonel in the Corps of Engineers. And who else is a registered professional engineer in Massachusetts and Alaska! . . . **Arthur Lowery** has been appointed manager of Mar-

ket Services at the Wyman-Gordon Company, Worcester, Mass., a forgoing supplier for missile, space vehicle, and automotive use. During the war he was a lieutenant colonel in the U. S. Air Force.

Richard W. Berry has been elected vice-president—transportation and purchasing by the directors of the United Fruit Company, Boston. He went with United Fruit after graduation as shore staff engineer, and as assistant vice-president since 1943 has been responsible for key activities in the company's marine operations. . . . A postcard with a picture of a huge fish, a world's record 126-pound salmon, and snow-capped mountains, tells us that Colonel **James E. Harper, Jr.,** reached Alaska as he predicted in last month's notes.—**Elwood W. Schafer,** Secretary, Room 10-318, Ext. 621, M.I.T., Cambridge 39, Mass.

'33

Our loss of **Emile Bustani** in a plane crash in Lebanon on March 14 will have significant consequences literally around the world. Not many classmates, nor even many of the 52,000 M.I.T. Alumni, have occupied the highly sensitive position in a combination of business and government that "M" has. To say that he devoted completely his mind and his energy for the good of his own country, which he did to the fullest, falls far short of the whole story. With uncanny perception he saw his small native country of Lebanon as a vital force in the partnership of the free world. His physique, his somewhat blustery buoyancy, and his quick smile, characterized the faith and the confidence he had in the rightness and the ultimate success of the principles he was fighting for. "M" represented the best of the M.I.T. tradition—analytical, energetic, straight thinking, full of conviction, and dedicated to a cause greater than himself. To these attributes he added a colorful personality, political acumen, an eager desire to stand up and be counted, and a warm humanitarian spirit that gave him unique stature among men. Within the month he had told **Guido Garbarino** he would come to our 30th Reunion, and "M" would be the first to say, "Carry on and make the most of this occasion to renew acquaintances."

Congratulations to **Bob Holt** who has added the title assistant treasurer to that of cashier of the National Life Insurance Company in Montpelier. . . . Have you returned the questionnaire on our 30th to **George Ropes**? Get to it, young man, and get with it! **Ed Goodridge** comes up with a new idea every day and has a full-blown, highly effective committee preparing a three-day package at Woods Hole that will do you more good than a month on the Riviera. **John** and Betty **Long**, in charge of hotel arrangements, have sampled the Nautilus and report in such glowing terms as "finest location at the Cape, luxurious, most inviting." For the non-golfers and non-swimmers, there are, among other attractions, the new Oceanographic Aquarium, world famous rose gardens, and boat trips to sample the beauties of Martha's Vineyard, and Martha may be there too! So come on, lads and lassies, it's later than you think. No fund raising, just fun from start to finish, and do plan to be in Cambridge on June 10 for Alumni Day. . . . Our class treasurer, **George Stoll,** reports that his daughter Maren, wife of a jet pilot in the Marine Corps, is currently in Japan and son Peter is a junior at the University of Mass. . . . Genial **Warren Henderson** has sent one of his periodic gems, this time on the eve of a fishing trip to Peru. Warren and Leona will be right there at the Nautilus, and the current foray into South America will add to his fund of salty stories. And if the fishing isn't good in Peru, we will venture that Warren will return with plenty to report from his rocking chair vantage point on the front porch.—**R. M. Kimball,** Secretary, Room 7-205, M.I.T., Cambridge 39, Mass.

'34

It is with sadness we receive the report of **Frederick Kaiser's** death on January 22 in Dedham, Mass. Graduating in chemical engineering, he remained a resident of the Greater Boston area except for his Army service in World War II when he served as an officer. In addition to his wife, Ethel, he leaves two children, Kenneth and Linda.

Robert C. Gunness, who was with our class for two years while doing graduate work, has been elected president of the John Crerar Library in Chicago. He is executive vice-president of the Standard Oil Company of Indiana and has been a member of the library board since 1961. . . . On a recent trip to Cleveland, Charlotte and I took the opportunity to get in touch with **John Hrones,** who keeps himself extremely busy as vice-president for academic affairs of Case Institute of Technology. He and Margaret went far beyond the bounds of casual hospitality, including a visit to their home in Shaker Heights and dinner at the Cleveland Skating Club where John is active both as a skater and tennis player. He and Margaret are both extremely well versed in academic affairs for, in addition to their own personal achievements, they have two children who are already college graduates (Radcliffe and Harvard) one more soon upcoming (Wellesley) and their youngest, John, who is a high school junior is now earnestly beginning to make his plans for college work in science or engineering. John told me of **Ed Sylvester's** decision to depart from the shipbuilding and automobile transport business to devote himself to the expanded use, through patent licensing, of his process for pressure casting steel.

Wallie Bird recently wrote to **Mal Stevens** and provided us with a wonderful synopsis of his professional and personal activities. He says: "I've actually not moved around much—started building streamline trains in Chicago after graduation. Then, after a year of graduate work as a Sloan Fellow in Course XV, went on to Buffalo to build airplanes. When the war was over I stayed on with the Curtiss Wright Research Laboratory, which later became the Cornell Aeronautical Laboratory. It was here that I developed the first air-supported radome, which, I guess, really started my career in the air structures field. After developing the radome, the inflated parabolic antenna, and acting as consultant to a number of companies both here and in Canada in providing radomes for the Pine Tree Line and other ground radar installations, I started my own company, BIRDAIR Structures, Inc. BIRDAIR now leads in the development of air structures (buildings of flexible coated fabrics, supported by air pressure) for both military and commercial applications. Because of the unusual, but interesting, nature of our business, we have been favored with a good deal of national publicity, including our pool enclosure which made the cover of LIFE on November 11, 1957. I am credited with having started a new industry and, as with all new ventures, much of our work must be devoted to 'educational' activities. In addition to air structures, we now also build commercial structures for warehousing, swimming pools, construction, and many other applications. We are the developer of the new "dual-wall" cellular structure now being used for portable radomes and equipment shelters by the military services. Our latest major project was the Telstar radome which is 210 feet in diameter and 160 feet high—by far the largest radome ever built—much larger than Lincoln Lab's largest geodesic unit. This radome covers the horn antenna used at the earth stations in both Andover, Maine and in Lannion, France.

"Our little company has grown steadily since its formation. Although still small, we had sales of almost two million last year and hope to continue growing. . . . While all this was going on, I did find time to get married to a girl I met in Boston when I returned for graduate work. Helen and I have two children: Bonnie, who just graduated from Smith College, and Don, who is studying chemical engineering at Cornell. While we don't vacation too much, we do find time for boating and water skiing in the summer, and Helen and I are now ardent curlers during the winter and frequently participate in bonspiels at nearby U.S. and Canadian clubs. We did, however, find time for a six-week motor tour of Europe last summer after completing the French Telstar radome installation. This turned out to be quite a lengthy note. That's what comes from waiting 28 years before writing."—**G. K. Crosby,** Secretary, 44 Deepwood Road, Darien, Conn.; **Harold E. Thayer,** Secretary, 415 West Jackson Road, Webster Groves 19, Mo.; **Malcolm S. Stevens,** Secretary, 9 Glenfield Road, Barrington, R.I.; **J. P. Eder,** Secretary, 1 Lockwood Road, Riverside, Conn.

'35

Last call to golfers for the third annual Class Golf Tournament. Wire or telephone your secretary today. . . . **Ned**

Collins, our regional secretary in Chicago, has really been putting the pressure on our midwest classmates. Here are some of the replies he has garnered and passed along for our notes. **Bob Anderson,** now of 9366 Jones Street, Omaha 14, Neb., wrote: "I have been with Continental Can Company for 15 years. I am now plant industrial engineer at the Omaha plant. We have one son who is attending the University of Omaha." Nice to hear from you, Bob, and I hope, along with Ned, that you will come through with an amplification of the above soon. . . . **Winston A. Close** wrote the following from Minneapolis: "I capitulate! The M.I.T. architectural team of Elizabeth (Lisl Scheu, '34) and Winston Close have held forth here since 1938, busily and happily. Since 1950 I have been advisory architect to the University of Minnesota. This involves long-range planning, co-ordination of building designs, and development of programs for buildings on the four campuses. This now takes my full time. Lisl continues, very ably, to run our little office, where I am a some-time consultant. Recently I returned to M.I.T. as a member of the Visiting Committee for the Department of Architecture. The faculty and student work is most impressive, but the quarters are in some ways less stimulating than the Rogers Building of our day. The department needs more space, and so do the neighboring departments which are closing in on three sides. The inescapable conclusion is that the department will have to move into a new building, perhaps adjacent to Hayden Library. The University of Minnesota has an M.I.T. flavor. Dean Belluschi and Professor Anderson have been consultants on planning and building design for the exciting west campus expansion across the Mississippi River. In a few years this will be a beautiful complex of buildings. Lisl and I have had time for some travel, for some child raising, and for quite a lot of music. Fiddlers are always welcome at our place. We play 'cello and viola." It's too bad we did not know you were in the Boston area so we could have had you attend one of the class Steering Committee luncheons. Many thanks for writing.

It was certainly good to hear from that incomparable bow-oarsman and hockey player of 30 years ago, **Paul Daley.** Paul is president of All-Steel Equipment, Inc., although you would never know it from the very interesting letter he wrote to Ned Collins: "I thought from our various reunions that amost everyone would be filled in with the meager information which I can provide. However, 'you asked for it' including your third 'needle,' so here goes: Upon leaving school, I worked for Barber-Greene Company, Stephens-Adamson Manufacturing Company, Anderson-Prichard Oil Company, and 48 installations in the Aurora and Chicago area. In 1944, I married my wife, Betty (known to some of the brethren as Yogi) and went to work for the Army in anti-aircraft, through Australia, New Guinea, and New Britain for four years. After returning, I worked for the Boston Ordnance District as chief of the Artillery Branch for a year. After the war, I returned to Aurora, Ill., to work for All-Steel Equipment, Inc., where I have been ever since. Here I have been engaged mostly in engineering and development work on various lines of quality office furniture and electrical boxes and fittings. Meanwhile, we have had three children, named Nancy, Patricia, and Michael, who are rapidly leaving the nest. Nancy is a junior at Dana Hall. Pat will leave next year, and Michael the year after. Somehow, between reunions and hacking huge divots at the local golf arena, we have managed to see some of Europe and Florida. Summers have been restricted to a little boating in and around Holland, Mich. At present, I am practicing diligently with a 'Swingrite' club and squeezing rubber balls in anticipation of the coming Class of 1935 Golf Championship. We are also looking forward to the 1965 reunion in the Caribbean and hope the response to this will bring out a good crowd. You and **Al Mowatt** are certainly doing an interesting job on the 'Class News.' Keep up the good work!"

The initial response to the 30th Reunion Site Committee's questionnaire was not particularly encouraging. See **Bob Forster's** letter later on in the notes. Perhaps those who are eager to go should arrange their passage together and go even though they will not have the ship to themselves. (See the March Review Class Notes for details.) . . . **John B. Ferchaud, Jr.,** 800 North Lindbergh Boulevard, St. Louis 66, Mo., wrote to Ned as follows: "I have received letters from you addressed to El Dorado, Ark. (I moved from this July, 1961), dated 11/16/62 and 1/18/63. When I received the first letter I didn't have the faintest idea who you were or what you were writing about. I kept the letter just out of curiosity to see whether you would write again. You did, and the only clue I have now is Class of 1935. I presume you are district secretary of the 1935 M.I.T. graduating class. Well, I went to M.I.T. in 1932 and summer of 1932, and only then. After that, because of financial reasons, I went to LSU (Louisiana State) graduating in 1935. I have been married some 15 years to a Mobile, Ala., girl. We have three children—two girls, 13 and 11, and a boy, 6. My home address is 182 Meadow Lark Drive, St. Louis 41, Mo. I work for Monsanto Chemical Company, Agricultural Chemicals Division, Engineering Department. My position is manager of engineering. I am completing my 12th year there on August 1. Previously I worked for the Chemical Construction Corporation of N.Y.C. for almost 10 years. I remember many of my freshmen buddies of the Class of 1935 at M.I.T. and keep track of one or two. I get the alumni letters. Also, as member of K E, I get the chapter yearly bulletin from M.I.T." Thanks for writing, John, and I hope you will add The Technology Review to your reading list so you can keep in touch.

John Bradner wrote the following letter from Cleveland: "Ned, thank you very much indeed for your note of the 17th that I found awaiting me on my return from my most recent expedition. In partial answer to your request for some information about what I've been up to in years past, just about all of the time that has gone by has been put in here at Lees-Bradner, save for a sojourn in the USNR. And, at one time or another, I have had a series of extremely interesting Lees-Bradner assignments. For, in times past, assignments culminated in first a vice-presidency, then the presidency, and more recently my present, pleasant chore, chairman of the board. And, too, a very happy reversion to my first love, for in addition to serving as chairman, I am also director of engineering and research, with which I am delighted. Incidentally, looking backward, rapidly approaching membership in The Three B's—bifocals, bridges, and batteries—a ruling emerging from a suggestion of mine was directly responsible for my departure from the Young Presidents' Organization for having gotten too old! To elucidate: upwards of a decade ago I numbered among the individuals responsible for the founding of the Young Presidents' Organization, and, some ways back, having slipped past the ripe old age of 48, I found myself no longer eligible for membership therein! I mention my YPO membership, beccause it was certainly one of the most inspiring experiences of my life. Incidentally, in more recent times, it has been my privilege to have been invited to and to have joined the Chief Executives Forum—a post-YPO group. Still looking back, it hardly seems possible that four years have slipped by since Leah's death in the early spring of '59. Yes, I have since remarried, and Virginia and my—now our—daughter Joan, presently a sophomore at Boston University, and I are almost idyllically happy amidst our new life in our new home in Shaker Heights. The chairman's chore isn't as demanding as the president's, and after some 15 years of it, the respite is welcome, especially from the point of view of time now available for activity in the Cancer Society in Cleveland, and a pleasant task as this term's treasurer of the National Metal Trades Association. Ned, my travels do take me to Chicago quite often. I promise a phone call the next visit." And, John, when you come Boston way, call me and I shall try to get a group together for lunch.

Bob Forster reported results on the 30th Reunion survey as follows: "I have received 32 answers to the 90 questionnaires which were sent out about the middle of January. Of these 32 replies, 12 are in the affirmative. Six of them for one reason or another are somewhat favorable to the idea, but it is either too early or they do not know their financial condition and would not sign up at this time. Some of them favor a shorter period, say five to six days. The balance are not interested. In view of this return, I do not feel that there is any great possibility of signing up the approximately 75 couples which would be necessary to make this a successful venture. When I say 75, this of course is the minimum number, and probably 90 double reservations would be required since there would most certainly be some dropouts. Many of the people felt that it was a good idea, but for a variety of reasons do not feel that

they could participate." I imagine the next step will be a proposal on alternate plans and you can be sure we will keep you posted. However, I am certain the committee would appreciate suggestions.

The following item appeared in the local newspapers recently: "**William L. Abramowitz** of 93 Atlantic Avenue, Swampscott, has been appointed general chairman of the 1963 campaign of the Jewish Community Federation of Greater Lynn. Abramowitz, Chairman of the Board of the Carlon Products Corporation, is a past president of Temple Sinai, Marblehead, a member of its board of trustees, and chairman of the building fund. He is a member of the board of directors and secretary of the Jewish Community Federation of Greater Lynn, a former chairman of the Israel Bond drive in Lynn, a member of the Young Presidents Organization, and a member of the Alumni Council of the Massachusetts Institute of Technology." We are all well acquainted with Bill's ability to raise money, based on his success with our Class Second Century Fund Gift, and wish him success in this new undertaking.

We regret to report the passing of Major General **Phillips W. Smith,** USAF-Retired, who received his master's degree in 1935. He died February 16, 1963, in Madison, Wis., and was buried with full military honors February 21 at West Point. . . . Miscellaneous information from here and there . . . Stewart Engineering Company of Santa Cruz, Calif., the company of which our West Coast Regional Secretary, **Gerry Rich,** is general manager, has just been acquired by Watkins-Johnson Co. of Palo Alto. . . . **G. Peter Grant**'s new business address is: Nashua Corporation, 44 Franklin Street, Nashua, N.H. (Welcome back to New England, Pete!). . . . **John DuRoss** now lives at 1750 Wagar Road, Rocky River 16, Ohio. . . . **Lester Lappin** has moved from Merchantville, N.J., to 404 Garden State Drive, Cherry Hill, N.J. . . . Hope we'll see a good crowd at our class table on Alumni Day.—**Allan Q. Mowatt,** Secretary, 11 Castle Road, Lexington 73, Mass.; Regional Secretaries: **Edward C. Edgar**, Kerry Lane, Chappaqua, N.Y.; **Hal L. Bemis,** 510 Avonwood Road, Haverford, Pa.; **Edward J. Collins,** 904 Merchandise Mart, Chicago 54, Ill.; and **Gerald C. Rich,** 105 Pasatiempo Drive, Santa Cruz, Calif.

'36

William A. Shea died suddenly on Washington's Birthday at his home in Wellesley. He was employed by Thomas O'Connor and Company of Cambridge, where he was general construction superintendent. He was a member of the Charles River Golf Club. He is survived by his wife, Mary; a son, William A., Jr; three daughters; and his father, William J. Shea. To his family the Class of 1936 extends sincere sympathy. . . . Dr. **Charles W. Mueller** of Princeton, N.J., has been named a fellow of the technical staff of RCA Laboratories "for continued outstanding technical achievements." A native of Illinois, Dr. Mueller was graduated from Notre Dame in 1934 and received his M.S. with our class and his Sc.D. in 1942. He joined RCA in 1942, engaging in research in high frequency receiving tubes, secondary emission phenomena, and solid state devices, notably high frequency transistors. In 1955 he was temporarily assigned to the RCA Electronic Tube Division in Harrison, serving as project engineer in the establishment of a pilot line of high frequency transistors. In 1961-62, Dr. Mueller was awarded an RCA European Study Fellowship at the Swiss Federal Institute of Technology in Zurich, where he was also associated with the RCA Zurich laboratory. He has received three RCA Laboratory Achievements Awards and was one of the recipients of the 1962 David Sarnoff Outstanding Team Award in Science "for team performance in conceiving and developing devices, circuits, and memories for kilomegacycle computers." He is a fellow of the Institute of Electrical and Electronics Engineers, and a member the American Physical Society and Sigma Xi.

Another graduate member of our class, Dr. **Bernard M. Sturgis,** is the 1963 chairman of the Division of Petroleum Chemistry of the American Chemical Society. He is manager of the mid-continent region of the Petroleum Chemicals Division of the DuPont Company with headquarters in Tulsa, Okla. He has been with DuPont since receiving his Ph.D. in 1936. . . . Experimental work by the Ford Motor Company's Gas Turbine Department of which **Constant L. Bouchard** is manager indicates that before many years turbine powered trucks will be in commercial operation. . . . **Bill** and Sally **Garth** have announced the engagement of their daughter Susan, a senior at Wellesley, to Marc Walker Comstock, 2nd, of Buffalo. A Williams alumnus, Mr. Comstock is serving in the Navy, stationed in Newport. A late summer wedding is planned. . . . Changes of address include: **Norm Copeland** to 8 Guyenne Road, Guyencourt, Wilmington 7, Del.; **Milt Dobrin** to the United Geophysical Corporation, 2650 East Foothill Boulevard, Pasadena, from Calgary, Alberta; Colonel **William L. McCulla** to Lathams on Cape Cod, Bittersweet Hill, Brewster, Mass.; **J. Ross McKeever,** 3017 Orchard Lane, N.W., Washington 7, D.C.; **Matthew N. Hayes,** 78 Northledge Drive, Buffalo 26, N.Y.; **Barney Rabin,** 14 Central Avenue, Marblehead, Mass.; Dr. **Charles J. Rife** from Lancaster to 2003 Market Street, Camp Hill, Pa.; and **Philip D. Slater** to 225 Lorraine Avenue, Spring Lake, N.J.—**Alice H. Kimball,** Secretary, 20 Everett Avenue, Winchester, Mass.

'37

Your secretary, **Bob Thorson,** recently attended a convention in Chicago for the Home Improvement Contractors, of which he is a director. **Norm Birch** arranged for a reunion meeting of a few of our classmates in that area, which included the Norm Birches, Bob Brauers, Ernie Ferris, and the Bob Thorsons. The **Joe Smediles** couldn't join the group as Martha had the flu (glad to report that she is fully recovered). Norm brought along his projector and after relaxing and enjoying a fine dinner, we reviewed the slides of our 25th Reunion which brought back many wonderful memories. Many pictures were taken at the reunion, and we hope that all of our class will bring them to our future reunions. . . . Norm Birch is technical director of the Albion Malleable Iron Company, Albion, Mich. **Bob Brauer** is supervisor of labor relations, of the American Oil Company, Chicago, Ill; and **Ernie Ferris** is chief engineer, Spring Division of the Borg Warner Corporation, Bellwood, Ill. We had a wonderful luncheon at the Union Club in Chicago as Joe Smedile's guests with much reminiscing and many laughs. Joe is a colonel in the Army. The following news item from a Chicago paper was forwarded by Ernie Ferris: "Colonel Joseph A. Smedile, for three years district engineer for the Chicago Army Engineer District, will be transferred early this summer, the Army Engineers announced. The Chicago Army Engineer District covers the greater part of Illinois, Wisconsin, Minnesota and Indiana. The office has jurisdiction over Army and Air Force construction in the four-state area. Its civil works includes the giant Cal-Sag Channel widening project now under way and supervision of all the locks of the Illinois waterways from Chicago to Grafton. District engineer assignments are usually for a three-year period. Smedile, who lives at 8916 Menard, Morton Grove, was assigned here in June, 1960. Colonel Smedile will be assigned to the staff of the Inter-American Defense Board in Washington."

Phil Peters passed on this news of **Phil Dreissigacker,** who wrote: "I have been traveling almost continually during 1962, covering various sales activities but primarily in behalf of two complete sugar factories we (Farrel) are constructing in Florida, and, for which I am project manager. Each factory is a $12-million project and construction is just being completed after a construction period of 18 months. One factory commenced operation October 29 right on schedule, and the second on November 27, also on time. Ruth, our boys and I each reflect on our wonderful 25th Reunion weekend many times with fond memories." . . . **Len Seder,** quality control consultant, was one of the seminar course leaders in a Quality Management Seminar presented by the Boston Section of the American Society for Quality Control and the A.S.Q.C. Institute at the M.I.T. Faculty Club in March.

Following are a few excerpts from the Winter, 1963, edition of the Goodyear Aircraft Corporation 'Profile' about **Ed Brittenham:** "It seems incongruous that one of the leaders of a major aerospace company competing against the Soviet Union in the battle of technology was born in the current Russian capital. Yet E. A. Brittenham, Jr.'s life seems to have predestined him for his position as chief engineer of Goodyear Aircraft . . . Brittenham was born in Moscow in 1914.

Three years later the Bolsheviks took over during the height of the revolution and Brittenham, Sr., a foreign affairs employee for International Harvester Company decided to flee to the U. S. with his family. Six years later, the elder Brittenham again was sent abroad, this time to Brussels . . . Returning to the U. S. several years later, Brit enrolled at Principia Prep School and Junior College in St. Louis, and then continued his education at M.I.T., where he was placed on the dean's honor list and was elected to Tau Beta Pi—honorary engineering fraternity. In his senior year, he was also named the school's most outstanding athlete . . . He began with the Goodyear Tire and Rubber Company in 1938, and was transferred to Goodyear Aircraft two years later. In 1942 he was made manager of technical services and in 1946 manager of production engineering. In 1954, he became assistant to GAC's renowned executive, Dr. Karl Arnstein, and stepped into his shoes when the designer of many airships and the world-famous airdock in Akron retired in 1957."

Stan Zemansky has been appointed vice-president of administration for the Kollsman Instrument Corporation, principal subsidiary of Standard Kollsman Industries. Stan went to Kollsman from North American Aviation where he was general purchasing agent at the company's Autonetics Division in Downey, Calif. Except for a period of approximately three years during World War II, when he served as an engineering and material officer in the U. S. Navy, he held important management posts at North American Aviation for 25 years. Stan also attended the California Institute of Technology and the University of California at Los Angeles. . . . **Harry S. Stern, Jr.,** has been elected a group vice-president of operations of Indian Head Mills, Inc. He retains his position as vice-president and general manager of the Uxbridge Division, and in addition will have management responsibility for the operations of the Native Laces and Textiles Company, and Linen Thread Company, Divisions of Indian Head Mills. Harry was an officer of Uxbridge prior to its acquisition by Indian Head Mills in 1960. A resident of Essex Fells, N.J., he has been associated with Uxbridge since 1937, when he was graduated from M.I.T.

From the president of Southeastern Construction Company, Charlotte, N.C., we received the following letter: **"Irving W. Tourtellot** is a modest kind of a fellow, and this information about him has been obtained indirectly. After serving as secretary-treasurer of the North Carolina section of the American Society of Civil Engineers for two and one-half years, Irving was elected second vice-president at the Section Meeting in Charlotte, N.C., recently. He has been active in committee and other work in the North Carolina section and also at the district and zone level. Irving moved to Charlotte about nine years ago, and in November, 1956, joined Charles T. Main, Inc., at their Charlotte office. He is supervising a number of projects as an associate of the Main organization, including work in the waterworks, earthwork, and port facility areas. The Tourtellots have two sons, the oldest of whom has been married about two years to a Charlotte girl; the younger boy is attending Lenoir-Rhyne College at Hickory, N.C., where he will finish in June of 1964. Irving enjoys living in North Carolina, and suggests that any members of the Class of '37 passing that way give him a call or drop by and see him, either at the office or at home." . . . It's been wonderful to have all this news to report . . . you keep sending it, and we will print it.—**Robert H. Thorson,** Secretary, 506 Riverside Avenue, Medford, Mass.; Professor **S. Curtis Powell,** Assistant Secretary, Room 5-323, M.I.T., Cambridge, Mass.; **Jerome Salny,** Assistant Secretary, Egbert Hill, Morristown, N.J.

'39

After months of writing about '39ers from written sources such as news releases, letters, and Christmas card messages, I've bumped into three real live classmates all within the space of one week, and telephoned a fourth. Quite a change for this class secretary! On a business trip to Bethlehem Steel's headquarters last week (mid-March) I telephoned **Michael V. Herasimchuk,** XIX. Mike's family was just recovering from a flu bout, and so he regretted not being able to invite me over to his house for the evening. Instead, he came over to the Hotel Bethlehem, and we had a fine time chatting about old times. Mike is now assistant to the vice-president of production, specializing on metallurgical matters and doing considerable traveling to help on customer problems having to do with steel forgings. He has been with Bethlehem since graduation, having started with the famous "loop" course. On the M.I.T. side of Mike's life, he is one of the old-time honorary secretaries, and in addition is regional chairman of the Educational Council. He and Jean have two boys, Peter, 8, and John, 5. . . . Mike told me that **Walter M. May,** II, lived in nearby Allentown, and so a quick phone call later that evening produced this news about Walt: he is vice-president, engineering, for Mack Trucks, Inc., headquartered in Allentown, Pa., and responsible for the product engineering of all three of the Mack plants. He earned the vice-presidency in 1956. Walt said that affairs are looking bright for Mack, with expansion under way, and with concentration being placed on export sales among other fields. Walt lives at R.D. #2, Allentown. He has one married daughter, and is about to become a grandfather.

Mike also gave me news of **William V. Bassett,** II-G, who did his undergraduate work at Cornell. Bill, now head of a drafting design group at Bethlehem Steel, married recently and has two children. He is a former secretary of the M.I.T. Club of Lehigh Valley. . . . And one final report from Mike Herasimchuk: After many years of no contact, he was pleasantly surprised several months ago to get a phone call from **Benjamin DeSimone,** XIX, who had stopped in Bethlehem on a sales call. Ben is in business for himself, having designed and manufactured an ingenious kitchen dishwasher for sale by department stores. (The Alumni Register lists Ben's address as: Precision Parts Company, 2932 Nebraska Avenue, Santa Monica, Calif.) . . . The day after returning from Pennsylvania, I was pleased to have **J. W. Mohlman,** X, X-A, drive up to the door. Bill was visiting his sister-in-law here in Darien, while on a business trip for Rocketdyne of North American Aviation. The company, located in Canoga Park, Calif., specializes in rocket engines for space and military uses. Bill is in long range planning, concerned with chemical diversification and new products planning. He lives in Tarzana, Calif., and has four boys and one girl, ranging from 16 down to one year. . . . Bill brought news of **C. William Guy,** XVI, who is executive vice-president of Rocketdyne, of **Morgan C. Y. Sze,** X, with the Lummus Company, in New York, and of **Carl Lenk,** X, with DuPont in Wilmington, working on instrumentation for chemical plants.

My third contact with a '39er in the flesh was with **Richard S. Leghorn,** XV. Dick, formerly president of Itek and its founder, is now president and director of Perini Electronic Corporation. The plant is in San Mateo, Calif., and its headquarters office is at 235 Bear Hill Industrial Park, Waltham, Mass., on the famous Electronic Highway—Route 128. As a side line, Dick was recently appointed by Secretary Hodges to the new Technical Advisory Board of the Commerce Department. This board's function is to recommend national policies whereby more of the country's scientific and engineering resources can be devoted to stimulating the civilian sector of the economy. Dick's new company, formerly known as Dialaphone, manufactures an automatic telephone dialing instrument which dials pre-selected phone numbers upon the touch of a button. And because of the memory characteristics of the instrument, Dick predicts great things for it in the storage and output of many types of pre-stored information.

Next, for some news release information. **A. Lindsay Thomson,** Grad XV, President and Treasurer of Terry Steam Turbine Company, Hartford, Conn., was recently nominated for the Board of the Hartford Steam Boiler Inspection and Insurance Company. He is also a director of the Connecticut Manufacturers Association, and lives in West Hartford. . . . **Francis W. Sargent,** IV, has been appointed director of the Division of Fisheries and Game of the Commonwealth of Massachusetts. Outdoor Editor Henry Moore of the Boston Herald gave Sargent a fine column on March 6, and I will draw from that source: "He began service for Massachusetts as director of the marine fisheries division (1947-56) and commissioner of the department of natural resources (1956-59), before being executive director of the Outdoor Recreation Resources Review Commission

for the four-year task of producing the exhaustive report the president has recommended be followed to meet the nation's needs for the rest of this century. While in Massachusetts' service, he was chairman of the Atlantic States marine fisheries commission, the governor's labor-management committee to promote the fishing industry, and was United States representative on the International Commission for the Northwest Atlantic Fisheries. He lives with his wife, Jessie, and three children Fay, 20, Francis Jr., 16, and Jessie, 12, on Barley Neck Road, Orleans, Mass.

Here's a follow-up item on **Irving Peskoe's** news which appeared in last month's Class News. He has mentioned in his letter that he was scheduled to attend the Armed Forces Staff College in Norfolk Va. The follow-up comes in the form of a news release from the U.S. Air Force Home Town News Center, indicating that Air Force Lieutenant Colonel Irving Peskoe has been assigned to Headquarters, 19th Bomber Wing at Homestead AFB, Fla., following his graduation from the Armed Forces Staff College, where he trained in the planning and employment of air, sea, and land forces in unified and combined commands. . . . **William A. Smith,** VI-A, was recently promoted from division substation engineer, Bergen Electric Distribution Department, to operating engineer, General Office, Newark, of the Public Service Electric and Gas Company of New Jersey. Bill lives at 704 Upper Boulevard, Ridgewood, N. J. He started with Public Service as a cadet engineer, and was made an assistant engineer two years later in the Electric Distribution Department. In 1951 he was transferred to the general office as an engineer, becoming division substation engineer in 1952 in Bergen. . . . A short note from **Robert Touzalin,** II, asked for confirmation of **Fred Cooke**'s latest address which appeared in the March Class News. Bob had written a year or two ago, and because of that did not report his current assignment. But I will repeat it, for those of you who may not remember: he is with Interlake Iron Corporation, an assistant chief engineer, with headquarters at Union Commerce Building, Cleveland 14, Ohio. Bob did mention his extra-curricular interest, however, which is to be active in industrial development in his home town of Aurora, Ohio. He says: "Attraction of industry to our village is coming along slowly but surely. That brochure which I sent you a couple of years ago has probably helped some, but largely it has been a matter of working through personal contacts." Bob's address is Box 14, Aurora, Ohio.—**Oswald Stewart,** Secretary, 31 Birch Road, Darien, Conn.

'40

It is with regret that I have to report the death of **Albert Grenville Bucklin** on January 15, 1963. Al was an instructor on the M.I.T. research staff. He was a native of Rutland, Vt., and a graduate of Rutland High School. He saw service in France during World War II and was a member of the Rutland Congregational Church. Al was an honor student at Tech and on the Dean's List for most of his stay. . . . **Herb Holloman,** who is Assistant Secretary of Commerce for Science and Technology, gave a talk at the annual meeting of the American Meteorological Society on "Weather and Earth's Atmosphere and Its New Demands for International Co-operation." . . . **George Halstead** has been named president of Alcoa Steamship Company. Previously, he was vice-president in charge of operations. . . . **Al Schlechten** is the new head of the Department of Metallurgical Engineering at the Colorado School of Mines. He moved to Colorado from the Missouri School of Mines, where he was head of the Metallurgy Department. Among his other accomplishments, Al was closely associated with the development of the first commercial method of producing high purity zirconium metal, which is now employed in the construction of nuclear reactors. He is past chairman of the American Society of Electrical Engineers Metallurgical Committee and past chairman of the American Institute of Mining Engineers Council on Education and also is an editorial adviser on mining and metallurgy for the Encyclopedia Britannica.—**Alvin Guttag,** Secretary, Cushman, Darby and Cushman, American Security Building, Washington 5, D.C.; **Samuel A. Goldblith,** Assistant Secretary, Department of Food Technology, M.I.T., Cambridge 39, Mass.

'41

William K. Hooper, Vice-president of Republic Foil, Inc. of Danbury, Conn., has been promoted to senior vice-president. Bill, a native of West Orange, N. J., joined Republic in 1956 as manager of the company's high purity etched foil operation and at the same time supervised the company's research and development program. During World War II he served as a captain in the Army Signal Corp, and prior to joining Republic, he was employed by Sperry Products, Inc. of Danbury as assistant general manager. Bill resides with his wife and five children in Brookfield, Conn., where he is chairman of the schoolboard. . . . Lieutenant Colonel **William G. Kussmaul, Jr.** was recently appointed Ordnance/Chemical Officer at U.S. Army Japan, Camp Zama. Bill entered the service in August, 1941. Major assignments have been as commanding officer, 29th and 343rd Ordnance Battalion, Fort Bragg, N.C.; senior advisor, Republic of Korea Army Ordnance School; senior advisor, National Safety Forces Ordnance School, Japan; Chief of Guided Missile Branch, Industrial Division, Office, Chief of Ordnance and Guided Missile and Nuclear Weapons Advisor to the Assistant Secretary of the Army (logistics). His last assignment was with the U.S. Army Satellite Communication Agency, Fort Monmouth, N. J. He attended the senior school, Marine Corps Schools, Quantico, Va. Among his awards and decorations are the Bronze Star Medal, Army Commendation Medal, and Korean Chung-Mul Medal. He is a member of the American Ordnance Association and American Rocket Society. A native of Shoreham, Long Island, N. Y., he and his wife and their daughter, Ann, and son, William, III, reside at the Sagamahara Dependent Housing Area, near Camp Zama. His daughter Ann is a National Merit Scholarship semifinalist and has been accepted for admission to Mount Holyoke College, South Hadley, Mass.

Luke S. Hayden, President of the Pittsfield City Savings Bank, Pittsfield, Mass., was recently one of three Massachusetts bankers visiting Senator Edward M. Kennedy of Massachusetts in Washington during his attendance at the annual conference of the National Association of Mutual Savings Banks. Luke is chairman of the Corporate Securities and Portfolio Management Committee of the national association. . . . Dr. **Davis R. Dewey, 2d,** President of Baird-Atomic, Cambridge Mass., has joined with the president of Allied Research, Concord, Mass., to recommend merger of the two companies to their respective directors and stockholders. A committee has been formed to conclude final details of the consolidation which will be submitted to the boards of directors and stockholders of each company. . . . **Hugh S. Kelly** has been appointed planning associate in Mobil Oil Company's planning and supply department. Mobil Oil is Socony Mobil Oil Company's operating division in the United States and Canada. After graduating from M.I.T. in 1941, Hugh worked in Socony Mobil's research department for five years. Since then he has been in the marketing department in the field of product line and quality. He resides with his wife, son David, 18, and two daughters, Susan, 14, and Jill, 11, at 638 Raymond Street, Westfield, N. J., where he is a member of the Westfield Tennis Club and the Westfield Community Players.

Professor **Yerman S. Touloukian** of Purdue University is the director of Purdue's Thermophysical Properties Research Center which has compiled a scientific best seller entitled "Retrieval Guide to Thermophysical Properties Research Literature." The second volume to the guide has just been issued. This publication is virtually a computer in book form and a basic contribution to new engineering developments. The guide is made up of three books representing the print-out of a special computer program, and permits a scientist or engineer to determine quickly what research has been done, exactly what information is available on seven thermophysical properties: thermal conductivity, specific heat, viscosity, emissivity, diffusion coefficient, thermal diffusivity, and Prandtl number. This is the result of an effort to solve the monumental task of locating every mention of a subject in published scientific literature to prevent tremendous waste and duplication of effort occurring in man's increasing scientific knowledge. It has been estimated that 90 per cent of all scientists who ever lived are alive today and scientific knowledge is doubling every 10 years. As laboratories and numbers of sci-

entists continue to increase, the information they develop could become less valuable simply because less may be made of it, for lack of being able to find it. Out of this chaos of knowledge, Yerman is creating a law of order with his TPRC's establishment in 1957. Born in Istanbul, Turkey, in 1920, Yerman received his B.S. in mechanical engineering in 1939 at Robert College in Istanbul, his M.S. in 1941 from M.I.T. and his Ph.D. from Purdue in 1946. On the Purdue staff since 1944, he was promoted to full professor in 1956.

James H. Terry, Jr. has become quality control director of the Granger Associates, an electronics firm in Palo Alto, Calif. Jim assumed the directorship following his retirement from the United States Navy where he served as captain and director of the San Franciscan Navy Yard's production department. He received his bachelor of science degree in 1936 from the U.S. Naval Academy where he ranked seventh in a class of 233 and his M.S. degree in 1941 from M.I.T. . . . **Preston R. Gladding** presented a paper, "An Appreciation Of a Small Shipyard," at a meeting of the New England Section of the Society of Naval Architects and Marine Engineers at the Faculty Club at M.I.T. Preston is president and naval architect of the Gladding-Hearn Shipbuilding Corporation of Somerset. His paper presented a broad picture of the problems and practices of a small shipbuilding operation.—Please send news items promptly to any one of the secretaries for publication in this column.—**Walter J. Kreske,** Secretary, 53 State Street, Boston, Mass.; **Henry Avery,** Assistant Secretary, 169 Mohawk Drive, Pittsburgh 28, Pa.; **Everett R. Ackerson,** Assistant Secretary, 16 Vernon Street, South Braintree 85, Mass.

'42

Bob Navin sent me the very sad news that **Ted Eliot** died suddenly the last week of February. Ted was well known to many members of our class. He was a sales executive for Scientific Design of New York City. He was always interested in M.I.T. and in our class, and I know his sudden passing will be a shock to all his friends. He is survived by his widow and three sons.

The University of Vermont now has a distinguished member of our class as its first Dean of Faculties. **Clinton D. Cook** is a professor and chairman of the Department of Chemistry there and in his new job will be primarily concerned with the academic program of the entire university. This new position is one of prestige and importance and we certainly wish him success. . . . **Francis J. DiSalvo** who was vice-president and general manager of Atlas Controls, Inc., of Natick, a company he helped found, has joined Sola Electric Company a division of Basic Products Corporation. He will be sales engineer in the Boston area. . . . **Charles S. Hoffmann** has been appointed manager of reactor engineering design for the SAR project at General Electric's Knolls Atomic Power Laboratory. I also note that Charlie is serving his eighth year as president of the Schalmont Central School District Board of Education and is also an officer of the Pattersonville Volunteer Fire Department.

Recently I had occasion to visit with **Toni Kayanan** and **Bob Sollenberger** in Puerto Rico. Although Toni received his degree with us in '42, he was in the Graduate School in City Planning and probably was not known to too many members of the class since he did not spend his entire undergraduate career at the Institute. Toni has lead a fascinating life, having traveled extensively all over the world, frequently under the auspices of the United Nations, working with underdeveloped countries in city planning problems. He is a most gracious host and his experiences are fascinating. I particularly liked his story of being offered, as guest of honor, the eye of the roast sheep by a sheik who was entertaining him in his tent while sitting on a beautiful rug spread on the sands of the desert. . . . Bob Sollenberger is production manager of Union Carbide International's large plant in Puerto Rico which produces ethylene glycol. I believe he has been in Puerto Rico for about five years and thoroughly enjoys the country and his work there.—**John W. Sheetz, 3d,** Secretary, Room 3-344, M.I.T., Cambridge 39, Mass.

'43

The big news continues to be the 20th Reunion, with all the usual behind-the-scenes planning, smoke-filled conference rooms, massive expenditure for equipment and facilities, contracts for orchestras, brass bands, entertainment, souvenirs, prizes, etc. With a budget of just under a million dollars for this three-day event, plans are underway for a $10,000-per-plate dinner, scheduled for Saturday night, June 8, at the Mayflower, for which we expect a turnout of over 100 persons, thereby breaking even (except for the cost of the food.) Chairman **Ken Warden** announced in March the following committee chairmen: **Al Burrill,** publicity; **Bud Cruckshank,** prizes; **Dick Feingold,** questionnaire; **Leo Feuer,** activities and sports; **Jim Hoey,** hotel; **Kemp Maples,** registration; **Fred Perry,** treasurer; **Hans Walz,** souvenirs. The dates of the Reunion are June 7, 8 and 9; the place is the Mayflower Hotel, Plymouth, Mass. By this time you will have sent in your registration fees and made reservations; planned your transportation, filled out and sent in the questionnaire, and wondered why your wife needs so many new clothes for just three days. Worry not. Except for the Saturday night cocktail party and dinner dance, informality prevails. Don't forget your golf clubs, tennis racquets, alpen-stocks, scuba gear, playing cards and Alumni Day in Cambridge on Monday, June 10. Last minute registrations may be had by telephoning or writing to **Kemp Maples** in Wellesley, Mass.—**Richard M. Feingold,** Secretary, 10 North Main Street, West Hartford 7, Conn.

'44

Thanks to several phone calls and an excellent clipping service a number of fellows have been contacted this past month. I had a chance to talk with **George Ziegler,** XV, patent attorney with International Nickel on Manhattan Island. The Zieglers have been vacationing in Maine the past few summers and are thinking of buying a house up there in the near future. When not in Maine George commutes to Chatham, N.J., where he has been active as president of the Morris County Art Association, a job he enjoyed tremendously, but the pay was next to nothing. . . . A note in the Berkshire Eagle of Pittsfield, Mass., indicates that **Ed Ahlberg,** XV, has been named manager of the Shoe and Graphic Arts Products Plant, W. R. Grace and Company, in Adams, Mass. Ed and Carolyn will be moving with their four daughters from Quakertown, Pa., where Ed had been very active in community affairs. . . . I had a long conversation with **Warren Signell,** XIII, who is chief engineer of the Marine Boiler Division of Foster Wheeler. He had been commuting to New York until about six months ago when his office moved to Livingston, N.J. His three daughters Karen, Jeanne and Ellen report that they like Livingston better than their old home, Palisades Park. Warren says that the family often spends summers on Long Island Sound. He has been in contact recently with **John Taft,** XIII, who is with Bethlehem Steel in Quincy, Mass. . . . **Dick Hatfield,** XIII, is with Booz, Allen and Hamilton, Bethesda, Md.

Harold Boericke, Jr., XIII, has recently become a consultant having spent many years with the Bureau of Ships in Washington. Warren recently saw **Jim Mavor, Jr.,** XIII, who gave a talk at the M.I.T. Department of Naval Architecture, on 'Submarines for Oceanographic Research.' Jim Mavor is with the Woods Hole Oceanographic Institution in Massachusetts. . . . A short squib in the General Motors employee bulletin indicates **Wilbur Oakley,** II, has been granted a patent for an automatic brake adjuster. He is a senior project engineer with General Motors located in Dayton, Ohio. . . . A call to **Bill Van Ravenswaay,** X-B, with California Texas Oil Company, indicates he is enjoying his return to this country which took place about two years ago. He had spent 13 years abroad with California Texas Oil primarily in construction. During this time he moved about the various Eastern and Far Eastern localities building pipe lines and planned communities. Bill lives in Larchmont and the Van Ravenswaays have a boy three-and-a half and expect an addition to the family this spring. Bill had recently run into **Larry Lamadrid,** X-B, who chose to leave Cuba when Castro moved in. Larry is in the meat packing business in Honduras and occasionally gets to New York. . . . I tried to get in touch with **Ed Tyberghein,** VI, by phone, but found he had recently moved to Bell Laboratories in Murray Hill, N.J.

A very nice telephone conversation with **Gene Schnell,** XV, indicates he was recently married in Kingston, Jamaica, to Ina Spelke. Gene says that he is living in Manhattan near Mayor Wagner's residence. He is a member of the M.I.T. Club of New York Investment Group and they are looking for members with technological investment interests. At a recent beer party of the M.I.T. Club of New York, Gene had a chance to chat with **Ken Nelson,** XV, from Long Island, who is in his own business; **Bob Meny,** V, Socony Mobil, and **Eric Wunsch,** II, Plant Manager of Silent Hoist and Crane. . . . Professor **Alan S. Michaels,** X, of the Institute presented a paper at the American Chemical Society Division of Industrial and Engineering Chemistry in Los Angeles in April. The title of Al's paper was "Transport of Liquids in Structurally Modified Polyethylene." . . . There are two more issues in this volume of The Review, so if you have any information you would like to pass along, please contact me.—**Paul M. Heilman,** Secretary, 30 Ellery Lane, Westport, Conn.

'45

Generally we must rely upon the mails to provide you with at most a bi-monthly digest of your classmates' activities. The mails have been lean this academic year; it is difficult to believe that the Class of '45 has reached that plateau where one's activities have died and the children's have not yet been born! How about a little '45 thaw! . . . I spent the last week of January in Ohio and had the good fortune to spend an afternoon and evening with **J. J.** and Edna **Strnad** in Cleveland. I never realized or appreciated the scope of J.J.'s activities and interests until this visit. As I reminisce I must rely on memory since my voluminous notes were lost in transit! J.J. (he is called Bud in Cleveland) is president of Lempco Products, a company his father started some 44 years ago. From a two-man operation hammering out of forging axles the company has grown to a three-plant operation stocking, selling and manufacturing a complete line of replacement parts for autos, trucks, tractors, etc. As a sideline (?) Lempco manufactures jigs of all sizes as well as a complete line of auto and tractor repair equipment ranging from brake drum lathes to mobile machines capable of boring (and what have you) broken down construction equipment in the field.

Last fall Edna and J.J. spent some eight weeks in Europe. Although the trip was primarily to arrange for European distributors, J.J. did manage to develop a few reciprocal manufacturing deals in the Common Market. We all recognize that it was necessary to sandwich in a little pleasure. The Strnads were able to arrange a trip behind the Curtain to Czechoslovakia where J.J. had an opportunity to visit cousins and other relatives. He and Edna were, of course, accompanied by a chauffeur-guide who was in constant attendance—even joined them when they visited relatives. His analysis of the people was about as you might expect. The old no longer have the desire although they well remember the good days of the past; the young cannot and do not believe or know of the past; and, unfortunately our generation seems not to care. In spite of this attitude the Czechs appeared to be the most able and industrious people behind the Curtain. Needless to say J.J. and Edna made the usual tourist stops as attested by their Christmas card which had the normal greeting in six European languages—German, Dutch, Danish, French, Italian, and Czech. Back in Cleveland, Edna has many club activities including the chairmanship of Vassar's most successful Alumnae Drive last spring. Jeff at 10 is attending University School, just like the old man, and playing peewee hockey at the local club—not like the old man. Lisa and Nina have their mother's charm, which will be causing J.J. no end of trouble in another six or eight years. Yes, I enjoyed my visit!

On the plane back to New York I had the good fortune to sit with **Walter 'Oakie' O'Connell** from Trenton. Oakie is production manager for Baldwin-Ehred-Hill. Traveling around to their five plants spread between Trenton, Texas, and I believe the West Coast, keeps Oakie out of trouble. When he is home, Walter does manage to see trouble in **Matthew 'Red' Harrington** who lives just across the Delaware in Yardley, Pa. Red has been down in Pennsylvania about two years now. Initially he was a district manager for Shell Oil but now he is working at Shell headquarters here in New York in market research and analysis. I can imagine that the Delaware jumps whenever these two get together for a brew or two.

This evening I had a most pleasant chat with Jean **Boland,** a Greenwich nearneighbor. I called hopefully for **Chris** since I wanted him as a speaker at the M.I.T. Club of Fairfield County in April. Yes, he was out of town; and from what Jean says this has been standard procedure the past couple of years. From domestic chemical and pharmaceutical analysis for Kidder Peabody, Chris has progressed into the Common Market. Initially his European analysis was in the chemical trade, but he has spent so much time in Europe that he has diversified into all European trade. Chris was in London the week DeGaulle lowered the market boom on the British. Kidder, Peabody's most recent analysis of this general situation was, in the most part, the work of our Chris. Congratulations!

Esso Research reports that **Robert H. Johnston** has been named an engineering associate in recognition of his accomplishments in the fields of distillation and process engineering. Bob was instrumental in developing the Model II steam cracker light ends systems and holds several patents in this area. Currently Bob is one of the company's chief consultants on mass transfer calculation methods and data evaluation. . . . Recent address changes find **Bill Humphreys** back at Westinghouse in Hyde Park, Mass., in Heavy Duty Products. . . . **Jim Hoaglund** moved from Phoenix, Ariz., to 1077 Cherry Street, Winnetka, Ill. . . . **O. Ray Smith** is bouncing around Australia, still with Mobil International Oil.

The Alumni Association Directory for 62-63 indicates the following '45ers are active as follows: **Bill McKay** continues as class representative on the Alumni Council; **Dave Flood** represents Scranton and Prexy **Dave Trageser,** Columbus, Ohio, again on the Council. **Jerry Quinnan** remains an Associate of the Council. **Dunc Luce** is an Alumni Representative on the Course XVIII Visiting Committee. M.I.T. Club Officers are: **Bill MacKenzie,** Treasurer, Bethlehem, Pa.; yours truly **Clinton Springer,** President of Fairfield County, Conn.; **Mario Wunderlich,** President of Guatemala Club; **Nai-Ping Ni,** Treasurer of Taipei, Taiwan Club; and **Bill McKay,** Vice-president of Framingham, Mass., Club. Educational Council Representatives are **Julian Davidson,** Little Rock; **Vince Butler,** San Francisco; **Dave Flood,** Natuck; **Al Oxenham,** Newark, N. J.; **Warren Miller,** Buffalo, N. Y.; **Ed Stoltz,** Pittsburgh; **Curt Beck,** Tampa, Texas; **Bob Gardner,** Cedar City, Utah, and **Kirk Drumheller,** Richland, Wash. . . . I trust my secretary is able to decipher these notes as they shall be mailed from Idlewilde tomorrow as Fran and I hurry off for 10 days in Bermuda, thanks to $10 and the luck of the draw. This trip is at the courtesy of the Oradell, N. Y., Lions' Club, a community 50 miles away. —**C. H. Springer,** Secretary, Firemen's Mutual Insurance Company, 420 Lexington Avenue, New York 17, N. Y.

'46

A communication received recently from M.I.T. gives advanced news about Alumni Day, and states that one of the attractions will be the inside story of inertial navigation and its part in interstellar space voyages, given by M.I.T. scientists who are responsible for creating the guidance system of the Apollo. Although no names are given, I am sure **Dave Hoag** will be there since he is in charge of M.I.T.'s effort on Apollo. . . . **Andrew Burns** writes from 122 Old Colony Road, Springdale, Conn.: "In our 17 seasons out, my belt length has been increasing steadily, but happily, my blessings have more than kept pace. The debugging phase of my family planning has not been without its setbacks but in the past three years my wife and I have adopted two incredibly luscious urchins and the whole lovely harem is now settled on its very own crabgrass plantation in Springdale, Conn. —Springdale—that's the snob name for Stamford's low tax district. Since leaving Norden Laboratories in 1955, I have been pursuing my weal with the American Machine and Foundry Company's Government Products Group in Stamford. My steady progress in this organization is attested to by my recent promotion from parking space 165f to 132c. On the basis of AMF efforts in the Titan and Atlas 'hard' launcher installations, I have been making pretentions as a specialist in nuclear weapons effects in general and shock isolation in particular. How well I am getting away with this gambit is evidenced by my role as author of 'Guide for the Selection and Application of Shock

Mounts for Shipboard Equipment,' published by AMF for the Bureau of Ships in 1961. If you would like a shorter but equally pedantic introduction to the shock isolation field, look up 'A Generalized Response Evaluation Procedure for Multi-Degree Spring Mass Systems' in the October 1962, Bulletin of the Symposium on Shock, Vibration and Associated Environments. For the past year I have been working on these types of problems with regard to landing vehicles on the moon. I am striving to get this program done in time for the Christmas toy trade just to hedge my bets about its performance in the lunar environment."

A recent article in the Boston Globe described the development of the StaRR-car, a cross-bred auto and rapid transit car. **Henry W. Pickford, Jr.,** a consultant at RCA in Burlington, has been co-operating with William Alden, president of Automation Management, Inc., in the development of this system, which seems to offer the possibility for high-speed door-to-door transportation without the need for high-cost tracks. . . . **Roger P. Sonnabend** of 46 Malia Terrace, Newton, Mass., is serving as 1963 chairman of the Trades and Professions Division of the Combined Jewish Philanthropies of Greater Boston Appeal. . . . **Lorenzo B. Lea,** who lives at 714 Forest Road, Glenview, Ill., has been elected assistant general counsel of Standard Oil Company (Indiana). . . . **Harry A. Augenblick** left IT & T during the Korean War to start his own basement business, Microlab, specializing in microwave hardware. His business has expanded so that it now occupys 45,000 square feet, has 800 customers, and does $3.4 million a year. Harry lives on Overhill Road, South Orange, N.J.—**John A. Maynard,** Secretary, 25 Pheasant Lane, North Oaks, St. Paul 10, Minn.

'48

With typical modesty, Class Secretary **Richard H. Harris,** declined to mention to your assistant secretary his election as trustee of the People's Savings Bank in Worcester, Mass. Dick, who is assistant treasurer of Norton International, Inc., forced us to uncover his recent election by means of our clipping service. In addition to his class alumni duties, Dick has also served as a past president of M.I.T.'s Central Massachusetts Club. He, wife Rosemary, and their five children, are also extremely active in community affairs. . . . Dr. **Guilford L. Spencer,** a member of the Williams College faculty since 1957, has been appointed chairman of the Mathematics Department. Following graduation from Tech with his master's degree, Guil was affiliated with the Ballistic Research Laboratories at Aberdeen Proving Ground, Md., University of Michigan, and University of Maryland. He was co-author of the book, "Elementary Topology," published by John Wiley in 1955. He and wife Eleanor have four children.

George F. Clifford, Jr., is president and chief operating executive of the newly formed Cryonetics Corporation, which has established laboratories and plant facilities in Industrial Park, Burlington, Mass. Prior to organizing his new firm, George was division manager of Spinco Division, Beckman Instruments, Inc. In this position he has had the opportunity of administering a rapidly growing, research-oriented instrument business based primarily on internally supported research and development efforts. With his wife, Mariagnes, and their two sons, he now resides in Wellesley Hills. . . . Dr. **Donald H. Tsai** is credited by his employer, National Bureau of Standards, Washington, D. C., with significant innovations in a high-speed photographic shutter design. . . . **Murray H. Rogers** now designs material handling systems for United Conveyer Corporation in Chicago.—**Herbert S. Kindler,** Assistant Secretary, 128 Elatan Drive, Pittsburgh 16, Pa.; **Richard H. Harris,** Secretary, 26 South Street, Grafton, Mass.; **Harry G. Jones,** Assistant Secretary, 1 Horizon Road, Apt. 1215, Palisade Section, Fort Lee, N.J.; **Robert R. Mott,** Assistant Secretary, Box 113, Hebron, Maine.

'49

The clipping service items are few in number this month. From biographical notes for an article, "Thermal Protection of Lifting Re-Entry Vehicles," in 'Aerospace Engineering' for January, we learn that **Frank M. Anthony** is now chief, airframe development, vehicle structures, Bell Aerosystems Company and is responsible for analysis and development of thermal protection systems and structural cooling systems. . . . A note from M.I.T. said that **Raymond F. Baddour** and three other chemical engineering types presented a paper, "Transport of Liquids in Structurally Modified Polyetheylene," at the April meeting of the American Chemical Society in Los Angeles. . . . On March 1, **Phil Valentine,** II, M.S., received one of five alumni awards presented by Howard University, Washington, D.C. This award cites "distinguished achievement in the field of engineering." Now in the Aerospace Sciences Department at North American Aviation's Space and Information Systems Division, he has been involved with heat transfer, jet propulsion and thermodynamic research since entering the aerospace field in 1944.

We are overwhelmed by two letters from class officers this month, both sparked by the forthcoming 15th Reunion, due in June of 1964 if memory and arithmetic still serve. **Russ Cox,** exalted Class President, writes to announce the appointment of **Wally Row** and **Stan Margolin** as co-chairmen of the event. A more immediate appointment is that of **George McQueen** as chairman of our class cocktail party for Alumni Day in June of 1963. . . . Russ also reports a nice visit with **Archie** and Audrey **Harris** in Tustin, Calif., near Santa Ana, where Archie is in charge of marketing new products for Autonetics. . . . On the personal side, Russ has resigned his position as vice-president and general manager of Cabot, Cabot and Forbes to go into the real estate business on his own. He expects to continue primarily in the Boston area in real estate development and promotion. I am sure I speak for the rest of the class, too, when I wish him the best of luck.

Stan Margolin, exalted Class Treasurer, writes further details about reunion plans. The reunion steering committee consists of co-chairmen Margolin and Row plus **Fletcher Eaton, George McQueen** and **Joe Lynch.** The Reunion will be held on June 12-14, 1964, at The Belmont, West Harwich-by-the-Sea on Cape Cod. Since 1964 is a presidential election year, the reunion theme, "Beaver Party Convention," is based on the idea of running the reunion like a political convention. Stan mentions "actual procedures like the two political parties," but I hope our organizers will remember to lay in an adequate supply of ballyhoo, opportunities for intrigue, smoke-filled rooms, lobbies with large entertainment budgets, suitable liquid refreshments, pretty girls, etc. In any event, Stan assures us that details will be worked out and solicits constant reminders in the class news of each Review. Since he promises copy for the Class News prepared by a publicity man, and since your exalted secretary is both lazy and overworked, you may fairly expect to receive a steady diet of reunion fume and froth between now and then. I hope it turns out to be good copy.—**Frank T. Hulswit,** Secretary, 53, Albert Hall Mansions, London S.W.1., England.

'50

Paul Egan has been appointed manager, Marketing Services, at U.S.I. Film Products, a new department of U.S. Industrial Chemicals Company. Previously he was product manager at the Kordite Division of National Distillers and Chemical Corporation, parent company of U. S. Industrial Chemical Company. U.S.I. Film Products is a major new international enterprise that manufactures polyolefin films and fabricates polyolefin film products, including heavy-duty industrial bags for bulk packaging, bakery films, and a wide variety of other films for use in industrial and consumer packaging applications. Paul and his wife, the former Ruth F. Timmins, and their two children live at 85 Colonial Village Road, Rochester 25, N. Y. . . . J. N. Pease Associates, Architects-Engineers announced that **Fred Sadri** is a senior associate. Fred will be in charge of architectural design. Fred and Mrs. Sadri and their three children reside at 2222 Beverly Drive, Charlotte, N.C. . . . **Bob Anderson** has been appointed regional sales director for the Eastern region, Honeywell Electronic Data Processing. In his new position, Bob will be responsible for co-ordinating and managing commercial computer sales activities and for devising short and long-term marketing strategy. Bob has been with the division since 1956, serving successively as sales engineer, assistant sales manager of the Southeastern area, and manager of Honeywell EDP's Washing-

ton, D. C., branch sales office when it opened in 1958. In 1960, he was named manager of the New York City branch office, a post he has held until being named Eastern regional sales director. Before joining Honeywell, Bob was with DuPont as an industrial engineer and later as head of office systems for the company's Film Department in Wilmington, Del., from 1952 to 1956, where he was engaged in methods and data processing systems analysis.

Gerry Lessells is with Polymer Service Laboratory of U.S. Industrial Chemical Company, a division of National Distillers, and has the responsibility for plant assistance to plants in Tuscola, Ill., and Houston, Texas, and for all plant-scale development work on conventional and linear polyethylene in U.S.I. Gerry and his wife, Jo, and boys Glenn, Ricky, and Doug, aged 10, 8, and 6, are living at 1631 Gregory Avenue. The phone number at Gerry's home is 429-1740 if anyone is passing through Decatur. . . . **Bill Enders** recently moved from Lexington, Mass., to 157 Grover Avenue, Princeton, N.J. The move came about when Bill was named manager-marketing for the RCA Laboratories at the David Sarnoff Research Center in Princeton. Bill and Jean have two children, Gregory, 8, and Kimberly, 4.

Here are some address changes that might be of interest to you: **Thomas N. Clark, Jr.,** American Telephone and Telegraph Company, 32 Avenue of Americas, Room 2100, New York 13, N. Y.; **John E. Ertel,** 42 Fern Terrac, Wayne, N.J.; **Duncan G. Hunt,** 4945-116th Place SE, Bellevue, Wash.; **W. Paul Jensen,** Atlantic Research Corporation, Shirley Highway and Edsall Road, Alexandria, Va.; **Carl Ajemian,** 3629 Bel Air Drive, SE, Cedar Rapids, Iowa; Dr. **Armand E. Brachman,** Marian Drive, Newburgh 30, N.Y.; Major **Richard H. Koenig,** 1002 Ampthill Drive, Alexandria, Va.; **John B. Lawson**, 481 Main Street, Wilbraham, Mass.; **Leroy E. Layton,** E. I. duPont de Nemours and Company, Textile Fibers Division, P. O. Box 1477, Richmond Va.; **John F. McCarthy, Jr.,** P. O. Box 524, Downey, Calif.; **Louis A. Morton,** 12631 West Outer Drive, Detroit 23, Mich.; **Donald O. Neilson,** 7620-79th Street SE, Mercer Island, Wash.; **Alvin D. Pendleton**, 2425 Lamberton Road, Cleveland 18, Ohio; **Alfred M. Petrofsky,** 4914 McCue Drive, Cheyenne, Wyo.; **Albert J. Romano,** 5365 Anaheim Road, Long Beach 15, Calif.; Professor **John H. Schmertmann,** 1050 NE 9th Avenue, Clearwater, Fla.; **Clemens L. Syverson,** 155 Kings Highway, Amherst 26, N.Y.; **Constantine T. Tsitsera,** 420 East 51st Street, New York 22, N.Y.—**Gabriel N. Stilian**, Secretary, American Management Association, 1515 Broadway, New York 36, N. Y.

'54

Bob Lait found time while apartment-hunting in Texas City, Texas, to send us a newsy letter. After six years with Monsanto Research Corporation in Everett, Mass., Bob has transferred to the Monsanto Chemical Corporation's Texas City operation, where he will be engaged in process research work. His letter also included the following items: **Bob Rohner** is living in Brookline, Mass., and still working for Stone and Webster. **Pete Rigopulos** was married last summer, and is working for General Electric in Lynn, Mass. **Mickey Sama** is now professor of chemical engineering and head of the graduate school at Lowell Technical Institute. He and his family are living in Groton, Mass. **Paul Koppel** is toiling for the Hydrocarbon Research Corporation in New Jersey. He and his wife now have two little girls. **Al Walz** has been married "about-a-year-and a half," and he and his wife Beverly have a recently-arrived son. Al is working in Erie, Pa. The **Howie Schiffs** now have two sons to brighten the family homestead in Jericho, N.Y. **Dick Miller** has left B. F. Goodrich in Watertown, Mass., and moved his talents to New Bedford, Mass., where he is involved with "a smaller company producing rubberized thread or something." And **Shelly Dick** is once again operating from Freeport, N.Y., but no one seems to know how or why.

A note from Margie **Leonard** informs us that she, **Larry,** and the two little Leonards are well settled in Cleveland now. Larry is teaching at Case Institute, and is currently involved in a graduate course in X-ray diffraction. Margie says that he and his students are working very hard. (Larry? Working hard?) . . . **George Schwenk** enclosed a cryptic message in his Christmas card: "Not much to report but things are brewing, a report in depth may follow." We have been waiting, but no deep reports have arrived yet. George said that he saw **Dave Sternlight** at the Fall Computer Conference in Philadelphia, and Dave is now a "shadow of his former self (no kidding!) and is somewhere up in the Litton hierarchy." . . . From other sources, we have word that **Mark Jablonko** married Allison Peters in New York on January 26. The Jablonkos are currently traveling around Australia and New Zealand, where Mark is on an anthropological research assignment for Columbia University. . . . **Marshall Nathan** and some of his cronies at IBM have been building better lasers. They have reported their work in the November 1 issue of "Applied Physics Letters," and in the January issue of the "IBM Journal." Marshall spends his time at the Thomas J. Watson Research Center, Yorktown, N. Y.—**Edwin G. Eigel, Jr.,** Secretary, 4945a Sutherland Avenue, St. Louis 9, Mo.

'56

Avraham Berkovits has written from Haifa, Israel. Since leaving Tech he has worked for Boeing in Kansas and NASA at Langley Field, Va., and received his masters from Virginia Polytechnical Institute. In December, Avraham, his wife, and son moved to Israel where he will work at the Israel Institute of Technology. He is in charge of building a high temperature structural test system and a static test facility for structural components. In addition, he will be a consultant to Israel Aircraft Industries, Ltd. . . . In another recent letter, **Jean-Paul Dreyfus** writes that after leaving Tech he attended the Harvard Business School. Upon graduation he joined the International Division of Texas Instruments where he helped establish the French subsidiary plant at Nice. Since December he has been with the Electronics Component Division of Corning Glass Works at Bradford, Pa. Eventually he hopes to work into international activities at Corning. . . . **Richard Barakat** of Itek spoke at the Department of Aeronautics and Astronautics in February on "Interaction of Surface Waves with Rigid Bodies." . . . **Francis McMahon** is at the Lawrence Radiation Laboratory at the University of California. . . . In case you missed it, page 23 of the February Review has a picture of **Bruce Montgomery** working in the new magnet laboratory. . . . **Ray Peck** is now with IBM in Sacramento, Calif. . . . Dr. **Philip Platzman** is at the Bell Telephone labs at Murray Hill, N.J. . . . **Bob Turner** was graduated from the Harvard Business School last June and joined the firm of E. P. Morgan and Company, a Boston realtor. . . . Classmates present at the March meeting of the Boston Luncheon Club included Lloyd Beckett, Bob Malster, Ed Najjar, and Bob Pollard.—**Bruce B. Bredehoft,** Secretary, 1094 Center Street, Newton Center 59, Mass.

'57

A number of interesting letters were received recently. **Harry Johnson** wrote from Connecticut: "Last November I made a successful defense of my doctoral dissertation at the University of Pennsylvania and am now a Ph.D. in economics. The subject of my dissertation was major medical expense insurance. At present I am an assistant professor of finance and insurance in the School of Business Administration at the University of Connecticut. This is my first year here, and so far I am enjoying every minute. Prior to my appointment I spent four and one-half years at the University of Pennsylvania, first at Wharton's graduate division picking up a M.B.A. in finance and banking, and then at the graduate school of arts and science for the Ph.D. I am married and have two girls; the oldest will be four in April, the second will be two in March. We spend all of our free time up in New Hampshire at an old farm house purchased and equipped with some modern conveniences." . . . A short note from **Herbert Klei** yielded the news that he is working for Charles Pfizer and Company and studying for his Ph.D. at the University of Connecticut. Herbert is married to the former Irene Rogers (Peter Bent Brigham Hospital, '57). The Kleis have two boys, aged three and one. . . . **Charles Speer** wrote from Italy: "Since my discharge from active duty in the Navy, I have been working for an international

management consulting firm called Mead Carney which is headquartered in London. There are about 10 of us assigned to the Milan office. I am just about to finish a 'Value Analysis' assignment for one of the companies of the Fiat group and if things go well and the value analysis work expands as we expect it to, there should be an opening for supervisory work in a few months. All in all, there are some challenging opportunities here in Europe and in Italy especially. Except for the language, I really can't say that life here in Milan is much different than that in any large industrial center in the U.S. The weather is terrible, but both the Italian Riviera and the Alps ski resorts are within three hours drive. My wife, Angela, and baby daughter, Christina, round out the picture. . . . **Joel Schiffman** dropped me a card to tell me of his recent marriage to the former Nancy Blonder (Barnard, '60) on Thanksgiving Day last year. He then added: "As for me, I got my M.D. from the N.Y.U. School of Medicine (where I met my wife) and am now a resident in surgery at the Manhattan VA Hospital. In October I will switch over to orthopedic surgery at Bellevue Hospital in New York." . . . I've heard from the grapevine (i.e. the New York wine drinking set) that **Bob Rosin** has some news to report. I'll try to chase it down for next month.—**Frederick L. Morefield,** Secretary, 17 Everett Street, Cambridge 38, Mass.

'58

Just the other day I got this dopey letter trying to get me to come to a class reunion. Class of '58 Reunion. Who needs it? I have enough work to do without sitting around with a lot of old friends and having a beer or two and visiting a lot of old hangouts around Boston and meeting old professors. I'll bet I wouldn't even recognize the guy who used to teach that nine o'clock. . . . I understand there will be a lot of time-wasting things like sailing. Sailing! And in the Charles. Suppose the boat turned over. Then what? Everyone knows that river is polluted and fish can't even live in it. Maybe my wife's boat would turn over. Yeah. Speaking of my wife, she might like to get to Beantown for a visit. Isn't that just like a woman—always thinking of sheer pleasure and relaxation and not about the important things like sitting behind a desk and tooling. It's that job that counts.

You know, I'll bet a lot of my old classmates would like to hear about my work. It's pretty interesting really. Of course, I'll never have time to write to them. Too busy. Wonder what they are up to. Oh well, I guess they don't have time to write either. But don't you just know that a bunch of them will be sitting around at this reunion and gabbing about their jobs and about old times. Maybe even going to a lecture or two. . . . Lectures! Can you imagine having lectures at a reunion? I wonder if Hans Mueller and Bill Greene are still around. Giving lectures. I'll tell you what I would do if I were on the Reunion Committee. I would set up a bunch of good lectures and I would talk to some of those professors and ask them to stick around the Institute and talk to the guys in the class when they returned. Some of those professors are really pretty interesting, you know. Some of them actually know what's going on in the real world.

And the Administration! You can bet that those guys will be hanging around the shadows of Building 7 and trying to get everybody to contribute to the Alumni Fund. You won't have to ask them twice. It's easy to dodge them though. Just carry a brown bag and they'll think you're a student. And broke. Naturally.

You know, there are a few of my classmates I'd like to see again. Maybe I'll write to them and see if they are going to the reunion. Maybe if they're going, I'll go. What was the name of that guy who said he would send you anyone's address if you wanted to write to them about the reunion. Here it is: **Jim Benenson,** c/o F. Eberstadt and Company, 65 Broadway, New York 6, N.Y. Maybe I can even talk my friends into going. It really doesn't sound so bad.

'59

Spring fever has once again slowed down the number of letters your secretary has received. Several of our classmates have changed their home address recently. I hope these people will write and give us the details of these moves. **Steve Whittemore** is now in San Francisco, I believe with Leeds and Northrup Company. . . . **Carl Neu** is out in Fort Sill, Okla., and **Larry Broutman** is now in Skokie, Ill. . . . **Neil Astle** has won first prize in a Department of Defense architectural design competition. Neil received $4,000 in prizes for the design of an elementary school and fallout shelter. . . . **Ron Colier,** now in the Army, has been assigned to the Pentagon with the Defense Atomic Support Agency. Ron is leading a rather posh military life—with an apartment in friendly Arlington, Va. . . . **Richard de Filippi** recently presented a paper entitled "Transport of Liquids in Structurally Modified Polyethylene" for the American Chemical Society in Los Angeles. As usual, I close with a request for correspondence.—**Robert A. Muh,** Secretary, M-424 Arlington Towers, Arlington, Va.

'60

Again the news is fairly sparse, the bulk of it contained in a letter received from **Al MacLaren** recently. Al's address is now 490th Strategic Missile Squadron, Malmstrom AFB, Mont. Yes, that is right. Al is a launch control officer with the first Minuteman wing up in the north woods. Al's report is that it is "very interesting work, although the image conjured up of sitting underground is not too pleasant to the layman's point of view." During off hours, he is attending classes for a master's degree in aerospace engineering, through a program run by the Air Force Institute of Technology. To those of you interested in what it might feel like to have such a job, Al says: "Being in the Strategic Air Command is quite different. There's a little greater sense of urgency about the mission, and when I'm on duty, I actually feel lethal knowing that I have ten nuclear warheads under my (and others) control." I don't know if that should make the rest of us feel safer or not. Anyway, thanks for the note, Al. . . . Only two other brief notes to report. **Charles Negin** was married last January to the former Claudette Slyvain. Charles was serving with the Navy at the time. . . . **Al Dierckes** received a master's degree in chemical engineering from Princeton in February.—**John B. Stevenson,** Secretary, 106 Ellery Street, Cambridge 38, Mass.

'61

As I write this, the still-wintry winds of March are blasting around Cambridge. However, the first notice of the 1963 Alumni Day is on my desk, and that brings to mind thoughts of that early June get-together. An extra attraction for '61ers will be our Cocktail Party, which, forget not, is scheduled for Sunday, June 9, at 4 P.M. Details here next month as well as in your letter from **Ira,** probably already in your hands. . . . I saw **Marla Moody Heath** and husband Stanley, '60, recently. They are both in geophysics here at M.I.T. and are making their home in Somerville. . . . **Raymond Friesecke** sent word via **Grady Harris** that he was just released from active duty with the Army. Ray was stationed at Fort Benning, Ga., and served as an intelligence officer with the Second Infantry Division's 37th Artillery.

Regards to the rest of the class are sent by **Leonard Hess;** he's presently serving as a second lieutenant in the Army at Fort Lee, Va. . . . **Charles Arcand** writes: "I have been gainfully employed by the General Electric Company, Silicone Products Department in Waterford, N.Y. (just outside Troy), since last October. My title is 'Chemist—Silicone Rubber' and my duties are of a research and development nature on silicone polymers; I am also getting a chance to do some rheological studies. Up here it seems that skiing is the rage, and so I have taken appropriate action, joined a ski club for the obvious reason (which is NOT that I want to learn how to ski)." . . . A note from **Bill Watson** accompanying his resubscription to this journal tells us that he has completed his six months' active duty in the Marine Corps Reserve, and has moved on to Toronto to accept a position as a transportation engineer with KCS, Ltd.

Ira Jaffe sent me word on several of our number. **Mike Wechsler,** he reports, graduates from Harvard Business School in June. **Jerry Goldman** is engaged;

Clement Vaturi and Joan Rindler will be married by the time you read this. (The date was March 31.) I was sorry to hear that **Will Kenigsberg** had been hospitalized from June to last February after a bad car accident. He was up and around at the time of Ira's writing; we hope his recovery is by now complete. Our Prez himself graduates from law school in August. . . . Don't forget to save the date of that cocktail party, if you can possibly make it. Hope to see you there.—**Joseph Harrington 3d,** Secretary, M.I.T. Graduate House 212-A, Cambridge 39, Mass.

'62

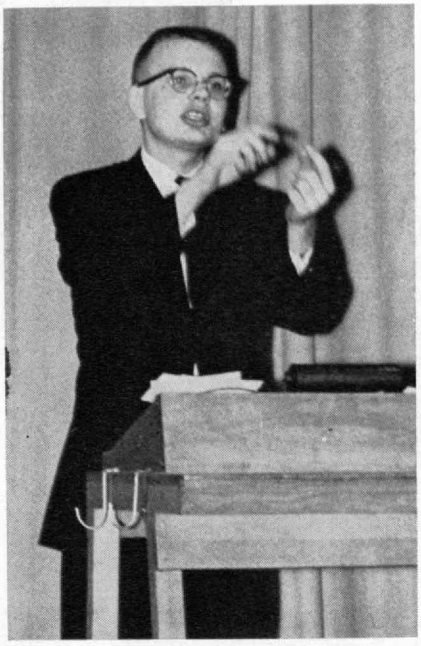
In a recent copy of the Stanford Daily, I read that **John J. Stuart,** XV, was engaged to Margo Ashauer of the Stanford Graduate School of Education. . . . **Art Samberg,** XVI, who is now attending Stanford graduate school in aeronautical engineering, was engaged to Rebecca Posner, a Stanford graduate student, in February. They will be married in Detroit this summer. Art worked for Lockheed before deciding to go to Stanford full time in April. . . . **Ed Linde,** I, was married to Joyce Goldfine of Brookline. Ed is attending Harvard Business School and Joyce will graduate from Boston University in June. They are living in an apartment in Brighton and are expecting a daughter(?) in August. . . . **Harold Metcalf,** VIII, will be married on June 2 to Marilyn Sonis. Harold is a teaching assistant in the Physics Department at Brown University.

The Class of '62 has emerged victorious in a recent competition at the Stanford Graduate School of Business. **Barry Roach,** XV, and **Gordon Mann,** XV, were selected as two of Stanford's three representatives on a flying seminar to Europe, sponsored by the John Hancock Mutual Life Insurance Company. This "Journey for Perspective" is a three-week, all expenses paid, discussion tour of Great Britain, France, Belgium, West Germany, and Sweden. The participants will be involved in high-level discussions with European business and government leaders.

Tom Nacinovich, II, is a research aide at the University of Michigan. . . . **Hitoshi Narita,** XIII, is working at the Mitsui Shipbuilding and Engineering Company in Japan. . . . **Phil Nelson,** XII, is at M.I.T. . . . **Marshall Kaplan,** XVI, is a member of the technical staff at Hughes Research Laboratory. . . . **Joe Kelly,** VI, is working for the Hamilton Standard Electronics Division and is attending R.P.I. part time. . . . **Stuart Nelson,** XVIII, is at M.I.T. on an assistantship. . . . **Christian Kemper,** VI, is working in Brazil. . . . **David Nickles,** X, is in the Navy. . . . **Lewis Norton,** XVIII, is at M.I.T. on an NSF fellowship. . . . **Terry Kohler,** XV, is a teaching assistant in the School of Industrial Management at M.I.T. . . . **David Knoff** V, is at Yale with an NSF fellowship. . . . **Robert Knighten,** XVIII, is a teaching assistant at M.I.T. He worked last summer as a mathematician for the U.S. Navy Electronics Lab. in San Diego, Calif. . . . **Ken Koerber,** VI, is a teaching assistant in electrical engineering at M.I.T. . . . **Dave Korkosz,** VI, is studying at Cornell. . . . and **George Krebs,** VIII, is at the University of Pennsylvania.

Gilbert Weingarten, VI, is a junior production engineer at Bendix Corporation. . . . **George Weir,** VI, was married last summer and is working in the research department of G. and J. Weir, Ltd. in Scotland. . . . **Melvin Weiss,** VII, is at the Downstate Medical Center in Brooklyn, N.Y. . . . **John Werkheiser,** XII, is at Harvard. . . . **Robert Wenzel,** VI, is an engineer at Bendix Corporation. . . . **Clark Woody White,** VIII, is in graduate school at Duke University. . . . **Charles Whitman,** XVI-B, is an associate engineer in control systems at General Dynamics in Pomona, Calif. . . . **Richard Willes,** XVI, is an instructor of aeronautical engineering at the U.S. Air Force Academy in Colorado. . . . **Robert Wong,** VI, is working at Western Electric. . . . **Bostwick Wyman,** XVIII, is at the University of California at Berkeley with an N.S.F. fellowship and an Honorary Woodrow Wilson fellowship. . . . A lot of you will be graduating in June and will, of course, be anxious to let it be known through this column where you will be working. Please don't all of you write me this information at once, however, since my mailman has been complaining about his overloaded mail sack. —**Gerald L. Katell,** Secretary, 3771 Redwood Circle, Palo Alto, Calif.

The Sounds of Spring at M.I.T.



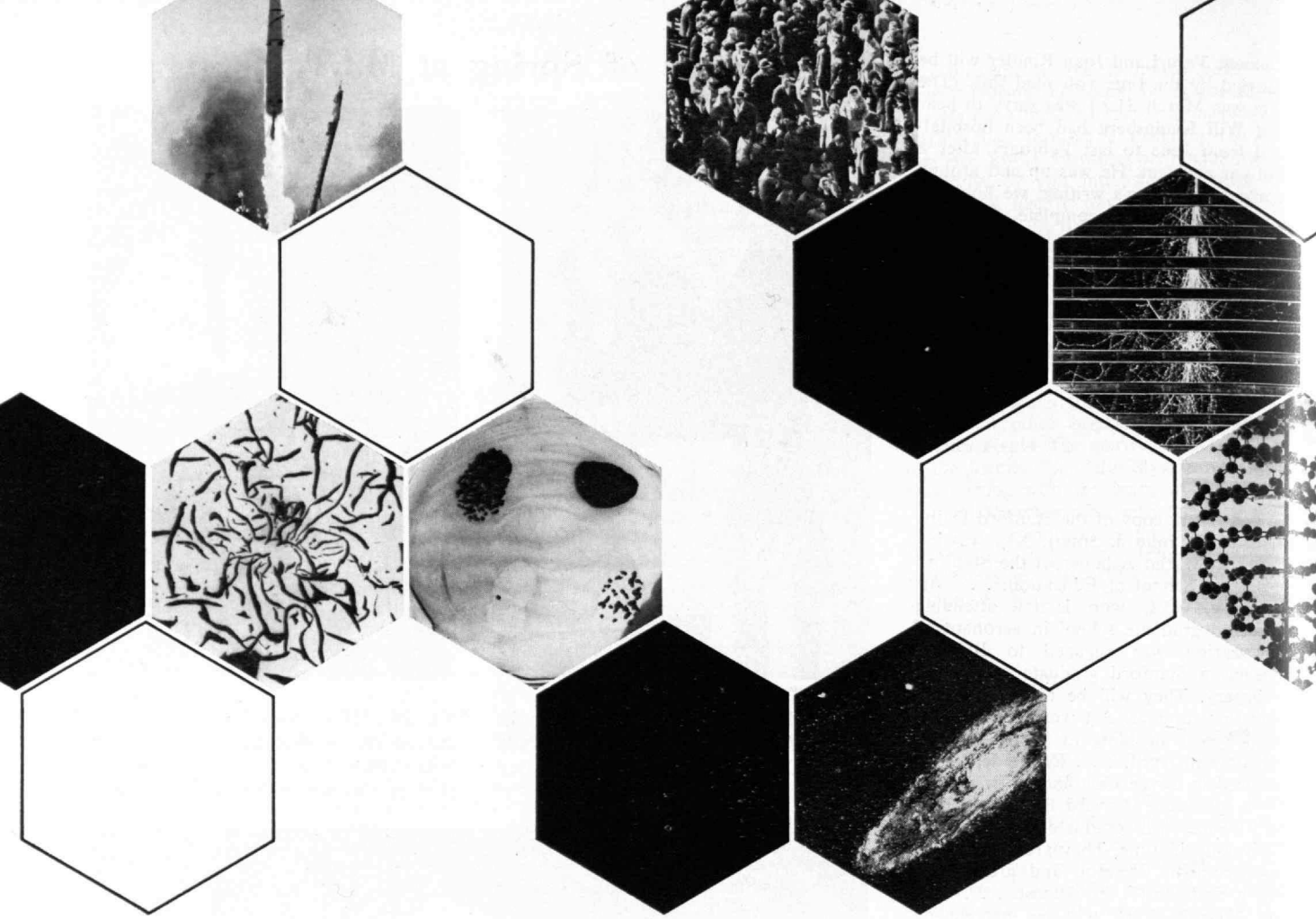
TECH DEBATERS, including Madis Sulg, '65, above, made the semifinals of M.I.T.'s 18th annual debate tourney this year. Boston College won.



TECH SHOW STARS this spring included Wendy Wolfe and Ron Bechtol, '64. Mike Jacobs, G, and Deloss Brown, '63, wrote the musical's script.



THE ALL-TECH SING brought these hillbillies from Zeta Beta Tau into camera range for Conrad Grundlehner, '64, of The Tech. A Senior House group won the Egbert (an ancient Victrola), and in the Serious Division, the judges rated the Burtones of Burton House first, and the Sigma Chi boys second.



The Massachusetts Institute of Technology Alumni Seminars

In the belief that many M.I.T. Alumni and their wives would welcome the opportunity to learn about exciting knowledge now developing at M.I.T., a special three-day seminar will be offered on September 7, 8 and 9, 1963. It will be held on the M.I.T. campus for a group of 150 to 250 Alumni and their wives.

The general theme, "The Beginnings of Things," will be divided into a series of lectures followed by discussion periods with the lecturers and their colleagues. Prior preparation from reading lists will be assigned. The lecturers and their topics are as follows:

The Origin of Matter

Harlow Shapley, Paine Professor of Practical Astronomy, Harvard, and Life Member, M.I.T. Corporation; **Patrick M. Hurley, '40,** Professor of Geology; and **William S. von Arx, '55,** Professor of Oceanography.

The Origin of Life

Irwin W. Sizer, Professor of Biochemistry and Head of the Department of Biology; **John M. Buchanan,** Professor of Biochemistry; and **Francis O. Schmitt,** Institute Professor and Professor of Biology.

The Shaping of Modern Society

Cyril S. Smith, '26, Institute Professor and Professor of Humanities and Metallurgy; **Warren K. Lewis, '05,** Professor Emeritus of Chemical Engineering; and **Vannevar Bush, '16,** Honorary Chairman of the M.I.T. Corporation.

At the end of the three days there will be a panel discussion by **Vannevar Bush, '16, Warren K. Lewis, '05, Elting E. Morison,** Professor of Industrial History, **Cyril S. Smith, '26,** and **Norbert Wiener,** Institute Professor and Professor of Mathematics, Emeritus. Concluding remarks will be made by **George R. Harrison,** Dean of Science.

Housing and meals will be on the M.I.T. campus. The fee for the seminars will be approximately $50.00 per person including room, board, and advance reading material. Those who want to assure receipt of further information and registration material should return the form below promptly. Attendance will necessarily be limited. Registration material will be sent in June, 1963.

Committee on Continuing Education
M.I.T. Alumni Association
Room 1-280, M.I.T.
Cambridge 39, Massachusetts

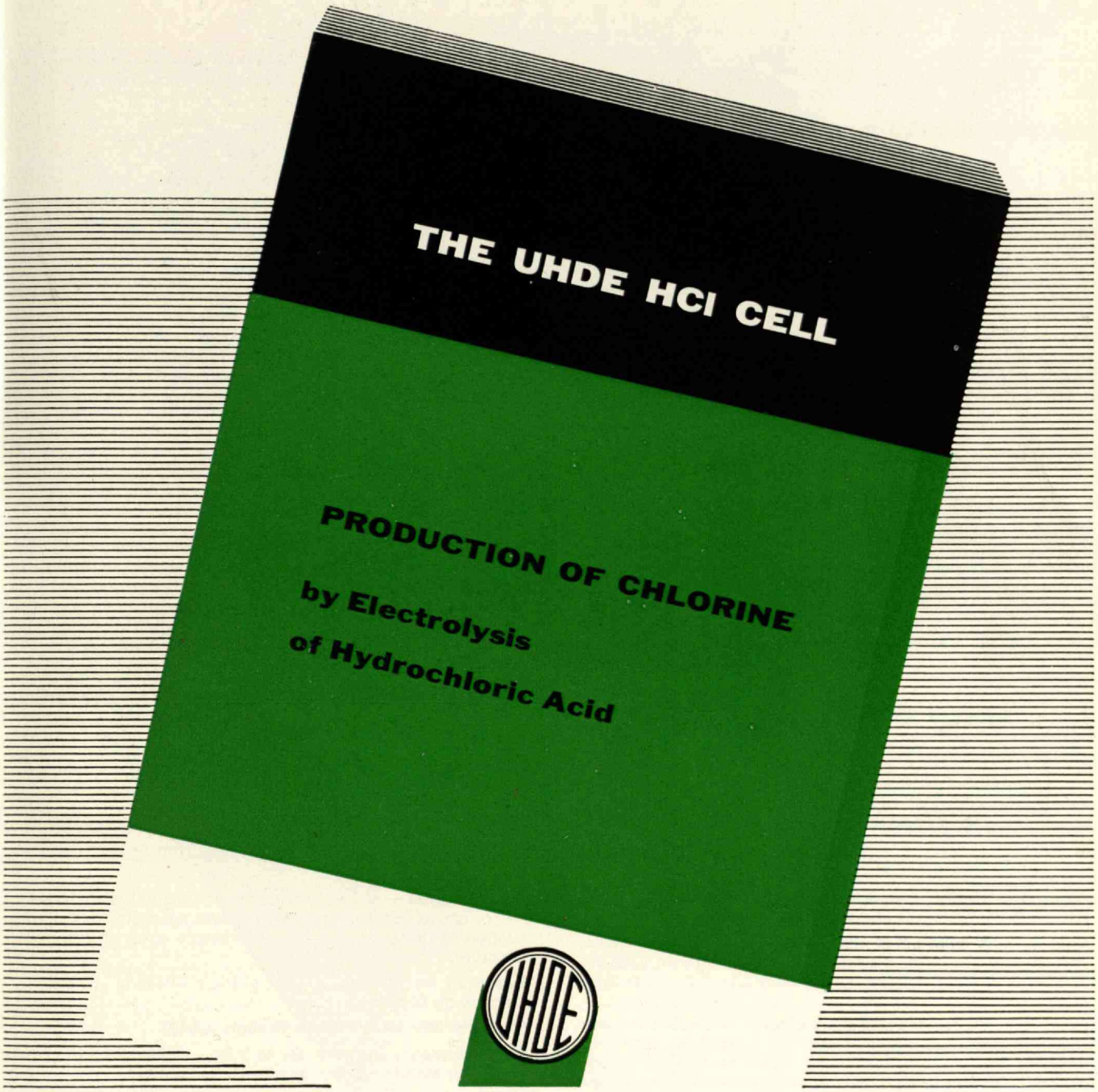
Please send me further information and registration materials for the M.I.T. Alumni Seminars planned for September 7, 8 and 9, 1963.

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M.I.T. Class _____

Address _____



Further information may be obtained from

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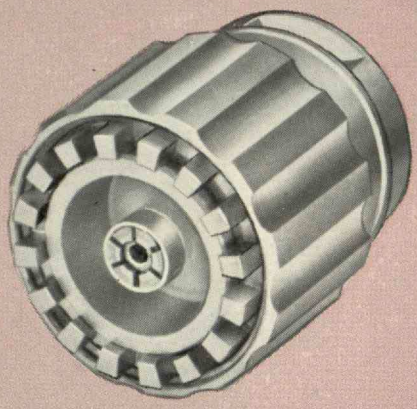
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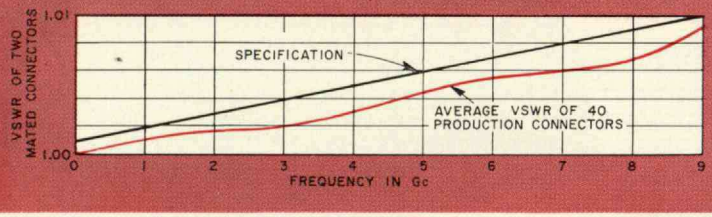




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